TINTINNALOGIA:
OR,
THE ART OF RINGING.

WHEREIN
Is laid down plain and easie Rules for Ringing all sorts of *Plain Changes*.

Together with
Directions for Pricking and Ringing all *Cross Peals*; with a full Discovery of the Mystery and Grounds of each Peal.

AS ALSO
Instructions for *Hanging of Bells*, with all things belonging thereunto.

by a Lover of that ART.

A. Persii Sat. V.
Disce: sed ira cadat naso, rugosaque sanna,

LONDON,
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TO THE
NOBLE SOCIETY
OF
COLLEDGE-YOUTHS.

GENTLEMEN,

I *Have ſeen a Treatiſe, intituled,* de Tintinnabulis —— *that is, of little Bells, the Language Latin, but pen'd by a* Dutchman, *being a Diſcourſe of ſtriking Tunes on little Bells with traps under the feet; with ſeveral Books on ſeveral Inſtruments of Muſick, and Tunes prick't for the ſame: Then conſidering that the Well-wiſhers to either of them, took great pains to make plain the uſe of them, I thought it worth a Dayes labour, to write ſomething on this Art or Science, that the Rules thereof*

might not be lost and obscured to some, as the Chronicles *before* William *the Conqueror, being given only by Tradition from Father to Son. Wherefore I humbly intreat you favourably to accept this small Treatise, as a foundation whereon may be raised a famous Structure; and if any one objects a fault, excuse it with the Ringing term* ——He was Over-bell'd—— *So you will much oblige him that is a Well-wisher to your Recreation,*

CAMPANISTA.

ON

On the Ingenious Art of RINGING.

WHat Muſick is there that compar'd may be
To well-tun'd Bells enchanting melody!
Breaking with their ſweet ſound the willing Air,
And in the liſtning ear the Soul enſnare;
The raviſht Air ſuch pleaſure loth to loſe,
With thouſand Echoes ſtill prolongs each cloſe;
And gliding ſtreams which in the Vallies trills,
Aſſiſts its ſpeed unto the neighbouring Hills;
Where in the rocks & caves, with hollow grounds,
The warbling lightſome Element rebounds.
This for the Muſick: In the Action's Health,
And every Bell is a *Wit*'s Common-wealth;
For here by them we plainly may diſcern,
How that Civility we are to learn.
The Treble to the Tenor doth give place,
And goes before him for the better grace:
But when they chance to change, 'tis as a dance,
They foot *A Galliard, a' la mode de France.*
An Eighteenſcore's a figure dance, but *Grandſire*
Hath the Jig-ſteps: & Tendrings Peal doth anſwer
The manner of *Corants*: A plain Six-ſcore,
Is like a *Saraband*, the motion ſlower.
When Bells Ring round, and in their Order be,
They do denote how Neighbours ſhould agree;

But if they Clam, the harsh sound spoils the sport;
And 'tis like Women keeping *Dover* Court:
For when all talk, there's none can lend an ear
The others story, and her own to hear;
But pull and hall, straining for to sputter
What they can hardly afford time to utter.

Like as a valiant Captain in the Field,
By his Conduct, doth make the Foe to yield;
Ev'n so, the leading Bell keeping true time,
The rest do follow, none commits a Crime:
But if one Souldier runs, perhaps a Troop
Seeing him gone, their hearts begin to droop;
Ev'n so the fault of one Bell spoils a Ring,
(And now my *Pegasus* has taken Wing.)

UPON

Upon the Presentation of

GRANDSIRE BOB

To the

COLLEDGE-YOUTHS,

By the

AUTHOR

Of that PEAL.

GEntlemen of the Noble Crew
Of Colledge-Youths, there lately blew
A wind, which to my Noddle flew
(Upon a day when as it Snew;)
Which to my Brains the Vapors drew,
And there began to work and brew,
Till in my Pericranium grew
Conundrums, how some Peal that's New
Might be Compos'd? and to pursue
These thoughts (which did so whet and hew
My flat Invention) and to shew
What might be done, I strait withdrew
My self to ponder — whence did accrue
This Grandsire Bob, which unto you
I Dedicate, as being due
Most properly; for there's but few

Besides, so ready at their Q—
(Especially at the first View)
To apprehend a thing that's New;
Though they'l pretend, and make a shew,
As if the intricat'st they knew;
What Bob *doth mean, and* Grandsire True,
And read the course without a Clue
Of this new Peal: Yet though they screw
Their shallow Brains, they'l ne're unglue
The Method on't (and I'm a Jew*)*
If I don't think this to be true,
They see no more on't than blind Hugh.
Well, let their tongues run Titere tu,
Drink muddy Ale, or else French Lieve,
Whil'st we our Sport and Art renew,
And drink good Sack till Sky looks blew,
So Grandsire *bids you All adieu.*

R. R.

THE

THE ART OF Ringing.

Of the Beginning of Changes.

IT is an ancient *Proverb* with us in *England* (*That* Rome *was not built in a day*) by which expreſſion is declared, That difficult things are not immediately done, or in a ſhort time accompliſhed: But for the *Art of Ringing*, it is admirable to conceive in how

ſhort a time it hath increaſed, that the very depth of its intricacy is found out; for within theſe Fifty or Sixty years laſt paſt, *Changes* were not known, or thought poſſible to be *Rang*: Then were invented the *Sixes*, being the very ground of a *Six ſcore*: Then the *Twenty*, and *Twenty-four*, with ſeveral other *Changes*. But *Cambridge Forty-eight*, for many years, was the greateſt *Peal* that was *Rang* or invented; but now, neither *Forty-eight*, nor a *Hundred*, nor *Seven-hundred and twenty*, nor any Number can confine us; for we can *Ring Changes*, *Ad infinitum*. Although *Philoſophers* ſay, *No Number is infinite, becauſe it can be numbred*; for *infinite* is a quantity that cannot be taken or aſſigned, but there is (*infinitum quoad nos*) as they term it, that is *infinite* in reſpect of our apprehenſion: Therefore a *Ringers* knowledge may ſeem *infinite* to dive ſo *infinitely* into ſuch an *infinite* Subject; but leaſt my Diſcourſe ſhould be *infinite*, I will conclude it, and proceed to the *Peals* following.

Before I Treat of the method and diverſity of *Peals*, I think it not impertinent to ſpeak ſomething of the *Properties*

ties wherewith a *Young Ringer* ought to be qualified, and then proceed to the *Peals*. *First* then, before he is entred into a *Company*, it is preſuppoſed, that he is able to *Set a Bell Fore-ſtroke and Back-ſtroke*, as the terms are: Next, that he know how to *Ring Round*, or *Under-ſally*: Then, that he may be complete, it is convenient, that he underſtand the *Tuning of Bells*; for what is a *Muſitian*, unleſs he can *Tune* his *Inſtrument*, although he plays never ſo well? To do which, let him learn on ſome *Inſtrument*, or *Wyer-Bells*, to know a *Third*, *Fifth*, and *Eighth*, which are the principal *Concords*: Or otherwiſe, let him get a *Pipe* called a *Pitch-pipe*, which may be made by any *Organ-maker*, to contain *eight Notes*, or more, (according to his pleaſure) with their *Flatts* and *Sharps*, which will be very uſeful in the *Tuning of Bells*. And then this is a general Rule, begin at the *Tenor*, or *biggeſt Bell*, and count 3 *whole Notes*, then a *half Note*, or *Sharp*, 3 *whole Notes*, then a *half Note*, or *Sharp*; and ſo on, until you come to the *leaſt Bell* or *Treble*. For example on *four Bells*, 1:234, here the 432 are *whole*

Notes, and the *half Note* or *Sharp* is between 1 and 2. On *Five Bells*, 12:345 the 543 are *whole Notes*; and the *half Note* or *Sharp* is between 2 and 3. On *Six*, 123:456 the *half Note* or *Sharp* is between 3 and 4. On *Eight Bells*, 1:2345:678, one *half Note* or *Sharp* is between 5 and 6 and the other between 1 and 2. On *Ten*, 123:4567:8910; here one *half Note* is between 7 and 8, and the next between 3 and 4. On *Twelve Bells*, 12:345:6789:10 11 12. Here one *half Note* or *Sharp* is between 9 and 10, the next between 5 and 6, and the other between 2 and 3, which last is made contrary to the former Rule, it being but *two whole Notes* from the next *half Note* to it; the reason is this, the *Ninth* is one *whole Note* below the *Eighth*, therefore the 2 must be a *whole Note* below the *Treble*, otherwise they would not be a true *Eighth*, therefore the *half Note* is put between 2 and 3. Now he that hath these Rules, and a good ear to judge of the *Concords*, may at any time cast his Verdict (as to Bells, whether they are well in *Tune* or not) amongst the chief of the *Company*.

Of

Of the Changes.

A *Change* is made between *two Bells* that ſtrikes next to each other, by removing into each others places, as in theſe *two Figures* 1,2. make a *Change* between them, and they will ſtand 2, 1. which is called a *Change*; make another *Change* between them, and they will ſtand in their right places, as at firſt, 1,2. Theſe *two Changes* are all that can be made on *two Bells.*

The Changes *on three Bells.*

On *three Bells* there are *ſix ſeveral Changes* to be made; in *Ringing* of which, there is *one Bell* to be obſerved, which is called the *Hunt*, and the other *two* are *Extream Bells* (but they cannot properly be ſo called, becauſe every *Bell hunts* in the *ſix Changes*; yet becauſe 'tis commonly *Rang* by obſerving a *Hunt* and *two Extream Bells*, I will therefore proceed in that courſe.) The name of *Hunt* is properly given to it, becauſe of its continual motion up and

down amongst the other *Bells*, which motion is called *Hunting*, and the other *two* are called *Extream Bells*, because when the *Hunt* is either before or behind them, that is at the *Extream*, or utmost place, there is a *Change* then to be made between them, called an *Extream Change*. There are two several wayes to *Ring* the *six Changes*. One whereof is to make the *Treble* the *Hunt*, and the other way is to make the *Tenor* the *Hunt*. I will give an Example in *hunting* the *Treble*, the *Bells* are supposed to stand thus. —— 123

Now the *Treble* must be *hunted* up over the *Second* and *Third*, which is to be done, by making a *Change* between the *Treble*, and each of those two Bells in order; therefore first I remove the *Treble* up over the *Second*, into the *Seconds* place, by making a *Change* between the *Treble* and *Second*, thus. —— 213

The *Treble* being removed up over the *Second*, it must next be removed up over the *Third*, as in this *Change*. —— 231

Alwayes

Alwayes obſerve, that when the *Hunt* moves from the foremoſt *Bell* toward the hindmoſt, then it *hunts* up, as in the *Changes* next before; but when it moves or *hunts* from the hindmoſt Bell, toward the Bell that leads, then it *hunts* down, as appears by the *Changes* following. The *Treble* being *hunted* up behind the *Extream* Bells, an *Extream Change* is next to be made between them. ——————— 321

Here you may obſerve, that if the *Hunt* had been *hunted* down without an *Extream Change* firſt made, thoſe *Changes* in *hunting* it down, would have been the ſame with thoſe that were made in *hunting* it up.

The *Extream Change* being made, the *Treble* muſt be *hunted* down again before the Bells thus. ——— 312

132

The *Treble* being now *hunted* down, the next is to be an *Extream Change*. ——— 123

which is the laſt *Change* of the *ſix*.

The other way to *Ring* the *ſix Changes*, is, to make the *Tenor* the *Hunt*, which being behind already, it

must first be *hunted* down, as in these *Changes.*

	123
The *Third*, which is the *Hunt*,	132
being *hunted* down before the	312
Bells, the *Extream Change* must next be made between the 2, and 1. which are the *Extream Bells*, thus.	321
The *Extream Change* being made, the *Third* must be *hunted* up again.	231
The *Third* being *hunted* up,	213
another *Extream* must be made, which brings the Bells round in their right places.	123

The Plain Changes *on four Bells.*

On four Bells, there are *Twenty four several Changes*, in *Ringing* of which, there is one Bell called the *Hunt*, and the other three are *Extream* Bells; the *Hunt* moves, and *hunts* up and down continually, and lies but once in one place, except only when it comes before or behind the Bells, at which time it lies there twice together; it has the same course here, as in the *six Changes* before

fore ſet down; two of the *Extream* Bells makes a *Change* every time the *Hunt* comes before or behind them. An Example I will here give, making the *Treble* the *Hunt*, and the *Extream Changes* I make between the two fartheſt *Extream* Bells from the *Hunt*. I ſet down the *four Figures*, repreſenting the *four Bells*, thus.——— 1234

The *Treble* muſt now be *hunted* up behind the Bells, where it is to lie twice together, and then to *hunt* down before them, where it muſt lie twice, and then *hunt* up again as before. The *Hunt* is alwayes one of the two Bells which makes every *Change*, except only when it comes before or behind the Bells, and it moves only over one Bell at a time; 'tis to be *hunted* up after this manner.——— 2134

The *Treble* being *hunted* up behind the Bells, as appears by the laſt *Changes*, the next is to be an *Extream Change* between the two fartheſt *Extream* Bells from the *Hunt*, 2314 2341

which

which are the *Second* and *Third*, thus.—

The *Extream* being made, the *Treble* must be *hunted* down again, as in these *Changes*.

The Treble being hunted down, there is another Extream Change to be made between the two farthest Bells from it, which are the Second and Fourth.

The Extream being made, the Treble must be hunted as before, and so to the end of the Peal, making an Extream Change every time the Hunt comes before and behind the Bells.

The Twenty-four Changes are to be Rang another way, in hunting up the Treble, which is, by making every Extream Change between the two nearest Bells to the Hunt, as in these Changes, first I hunt the Treble up.—

The Treble being hunted up, the Extream Change is to be made between the 3, and 4. which are the two nearest Bells to it, as in this Change, and so to the end of the Peal, making every Extream between the two nearest Bells to the Hunt all the way.

	3241
	3214
	3124
	1324
	1342
	3142
	3412
	3421
	4321
	4312
	4132
	1432
	1423
	4123
	4213
1234	4231
2134	2431
2314	2413
2341	2143
	1243
2431	1234

These

These two wayes in *Ringing* the *Twenty-four*, differs only in making the *Extream Changes*, one whereof is to make them between the two fartheſt *Extream* Bells from the *Hunt*, and the other to make them between the two neareſt Bells to it.

The *Twenty-four Changes* are to be *Rang* two wayes more in *hunting* down the *Treble*; one way, is to make the *Extreams* between the two fartheſt Bells from the *Hunt*; and the other, is to make them between the two neareſt, as before. A ſhort Example I will ſet down, the Bells ſtand thus. — 1234

The *Treble* ſhould now be *hunted* down, but it being already before the Bells, inſomuch that it can be removed no lower; therefore the firſt muſt be an *Extream Change*, either between the two neareſt, or two fartheſt Bells from the *Hunt* at pleaſure; the *Extream* being made, the *Treble* is to *hunt* up, and ſo to the end of the *Peal*, in the ſame courſe as before.

In *hunting* the *Second*, *Third*, or

1234
1243
2143
2413
2431
4231
4213
4123
1423
1432
4132
4312
4321
3421
3412
3142

or *Fourth*, there is to be observed the same course, as in *hunting* the *Treble*: A short Example I will set down, in *hunting* the *Third* up, and making the *Extream Changes* between the two farthest *Bells* from it.

First, I *hunt* up the *third* over the *fourth*; the *Hunt* being up, I make an *extream* between the *treble* and *second*, and then *hunt* down the *third* again, as in these *changes*, which course is to be observed to the end of the *Peal*.

1234
1243
2143
2134
2314
3214

I have insisted the longer upon the directions to the *Twenty-four changes*, because it is the ground and method in *Ringing* all *plain changes*; and by understanding this aright, the Learner will more easily apprehend the course of all *plain* and *single changes* whatsoever.

The *Twenty-four plain changes* are to be *Rang* sixteen several wayes; in *hunting* one Bell, it is to be *Rang* four ways; that is, two wayes in *hunting* it up, and the other two wayes in *hunting* it down, (as appears in my directions before in *hunting* the *treble*:) so that in *hunting* the 4 Bells, 'tis to be *Rang* 4 times 4 wayes, which makes 16, some of which I have here set down.

Treble

Treble Hunt up, Extream between the 2 fartheſt Bells from it.		Second up, extream between the 2 neareſt to it.		Fourth down, Extream between the two fartheſt Bells from it.	
1234	4312	1234	4231	1234	3421
2134	4132	1324	2431	1243	3241
2314	1432	1342	2341	1423	3214
2341	1423	1432	3241	4123	2314
3241	4123	1423	3421	4132	2341
3214	4213	1243	3412	1432	2431
3142	4231	2143	3142	1342	4231
1324	2431	2413	3124	1324	4213
1342	2413	4213	3214	3124	2413
3142	2143	4123	2314	3142	2143
3412	1243	4132	2134	3412	2134
3421	1234	4312	1234	4312	1234
4321		4321		4321	

Some perſons do obſerve to *Ring* the *Twenty-four changes* with a *whole Hunt*, and *half Hunt*; but that is an imperfect courſe; for there cannot be one *half hunt* only, but there will unavoidably be three *half Hunts* in one and the ſame *Twenty-four*; therefore I have ſet down the other way to *ring* it, by obſerving a *hunt*, and *three extream* Bells, which courſe is much more eaſie and true.

In

In the *Twenty-four Changes* are contained the *six Changes*; the *three Extream Bells* in the *Twenty-four*, makes the *six Changes* in course, every *extream change* being one of the *six*, and the *Hunt* hunting through each of the *six Changes*, makes *Twenty-four*: For Example, take the *three Extream* Bells in the first *Twenty-four* set down before, which are 234, and set down the *six Changes* on them, thus.——

Now take the first *Change*, which is 234, set the *Treble* before it, and *hunt* it through, thus.——

The *Treble* being *hunted* up behinde, take the next *Change* of the *six*, which is 324, set it directly under the *First*, and *hunt* the *Treble* down through it, thus.——

And so take each of the other *six Changes*, and *hunt* the *Treble* through them, it will make *Twenty-four*.

234	1234	3241
324	2134	3214
342	2314	3124
432	2341	1324
423		
243		
234		

I will here insert two or three old *Peals* on five Bells, which (though rejected in these dayes, yet) in former times were much in use, which for *Antiquity sake*, I here set down. And first,

The Twenty *all over.*

The course is this—every Bell *hunts* in order once through the Bells, until it comes behind them; and first the *Treble hunts* up, next the *Second*, and then the 3 4 and 5, which brings the Bells round in their right places again, at the end of the *Twenty Changes*, as in this following *Peal.*

This Peal is to be Rang, by hunting the Bells down, beginning with the Tenor, next the fourth, and so the third, second, and treble, which will bring the Bells round in course as before.

12345
21345
23145
23415
23451
32451
34251
34521
34512
43512
45312
45132
45123
54123
51423
51243
51234
15234
12534
12354
12345

An

An Eight and Forty.

In this *Peal*, the *Fifth* and *Fourth* are both *whole Hunts*, each of which does *hunt* down before the Bells by turns, and lies there twice together and then *hunts* up again: The 1,2 and 3 goes the *six changes*, one of which is made every time, either of the *whole Hunts* lies before the Bells, as in the following *Changes*, where the *fifth* hunts down the *first*; and lying before the Bells, there is a *change* made between the 1 & 2, which is one of the *six changes*; and then the *fifth hunts* up again into its place, and the *fourth hunts* down, which lying before the Bells, there is another of the *six changes* made between the 1 and 3, and then the *fourth hunts* up again, and the *fifth hunts* down next; in which course it continues to the end of the *Peal*, each of the *whole Hunts* lying but twice at one time before the Bells, as in these following *changes*.

12345	21345	23513	34215	53124	41235
12354	21435	25314	43215	51324	14235
12534	24135	52314	43125	15324	12435
15234	42135	53214	34125	13524	12345
51234	42315	35214	31425	13254	
52134	24315	32514	31245	13245	
25134	23415	32154	31254	13425	
21534	23145	32145	31524	14325	
21354	23154	32415	35124	41325	

Cambridge *Eight and Forty.*

Wherein it is obſerved, that the *Treble* and *Second* does never come behind, neither does the *Fifth* and *Fourth* come before, as in the following *Changes.*

12345	32415	12453
21345	32145	12435
21354	23145	14235
21534	23415	14325
25134	24315	13425
25314	24135	13245
23514	21435	13254
23154	21453	13524
32154	24153	15324
32514	24513	15234
35214	25413	12534
35124	25143	12354
31524	21543	12345
31254	12543	
31245	15243	
31425	15423	
34125	14523	
34215	14253	

The Plain Changes *on five Bells.*

There are *Six-score Changes* to be *Rang* on *five Bells*, which are to be *Rang*, by observing a *whole Hunt*, a *half Hunt*, and *three Extream Bells*; the course of the *whole Hunt*, is the same with the *Hunt* in the *Twenty-four Changes*, and *hunts* up and down in the same manner. The *half Hunt* moves once, that is, over one Bell every time, the *whole Hunt* comes before and behind the Bells; but when the *half Hunt* is removed either before or behind the *Extream Bells*, then there is an *Extream Change* to be made. For Example, I make the *Treble* the *whole Hunt*, and *hunt* it up; and the *Second* the *half Hunt*, and *half hunt* it up, making every *Extream Change* between the two fartheſt *Extream Bells* from the *half Hunt*; the *Extream Bells* are the *Third*, *Fourth*, *Fifth*: Now obſerve, that whereas in the *Twenty-four Changes*, an *Extream Change* was always made, when the *whole Hunt* came before or behind the *Bells*, in theſe *Six-ſcore*

Changes

Changes an *Extream* is alwayes to be made, when the *half Hunt* comes before or behind the *Extream Bells*; first the Treble is to be *hunted* up, as in these *Changes.* ——— 12345

The *whole Hunt* being *hunted* up, the *Second*, which is the *half Hunt*, must be *hunted* up over one *Bell*, as in this *Change.* ——— 21345 23145 23415 23451 32451

The *half Hunt* being removed up over one *Bell*, the *whole Hunt* must be *hunted* down again, as in these *Changes,* ——— 32415 32145 31245

The *whole Hunt* being *hunted* down, the *half Hunt* is to be removed up over the *Fourth*, which is the next *Bell* to it. ——— 13245 13425

The *whole Hunt* is to *hunt* up as before. ——— 31425

Now the *half Hunt* is to be *hunted* up over the *Fifth*, which is the next *Bell* to it, thus. ——— 34125 34215 34251 34521

Here the *Second*, which is the *half Hunt*, is removed quite up behind the *Extream*

Bells; yet the *Extream Change* is not to be made, until the *whole Hunt* has removed down through the *Bells*, as in these *Changes*.—

34512

And it is a constant Rule, that whensoever the *half Hunt* has removed up behind the *Extream Bells*, or down before them, the *whole Hunt* must *hunt* through the Bells, before the *Extream Change* is made, as in the last *Change* but four, which is 3,4,5,2,1. the *Second* being the *half Hunt*, is removed up behind the 3,4, and 5. which are the *Extream* Bells; and then the *whole Hunt* being behind, *hunts* immediately down; and now the *Extreame Change* is to be made between the 3, and 4. which are the two fartheſt *Extream* Bells from the *half Hunt*, as in this *Change*.—

34152

31452

13452

14352

The *Extream* being made, the *whole Hunt* and *half*

Hunt

Hunt [illegible]o remove again; and first the *whole Hunt* must be *hunted* up. ——— 41352
43152

Now the *half Hunt* is to be *hunted* down under one Bell, thus. ——— 43512
43521
43251

The *half Hunt* being removed, the *whole Hunt* is to be *hunted* down. ——— 43215

The *half Hunt* is to be removed down under another Bell, as in this *Change*. ——— 43125
41325
14325
14235

Now I hunt up the Treble. ——— 41235
42135

The Treble being *hunted* up, I *hunt* down the *Second* before the *Extream* Bells. — 42315
42351
24351

Now I *hunt* down the Treble again, and then make the *Extream Change*, as in these *Changes*. ——— 24315

The laſt is the *Extream Change*, which is made between the *Third* and *Fifth*; and this courſe is to be obſerved to the end of the *Six-* 24135
21435
12435
12453

ſcore Changes, which is ſet down at large at the end of the directions to this *Peal*.

Another ſhort Example I will inſert, which is *Second* down, and *Fourth* up, (for that is the common Phraſe amongſt *Ringers*) whereby 'tis alwayes to be obſerved, that the firſt Bell which is named, is the *whole Hunt*, and the ſecond that is named, is the *half Hunt*, as herein you may perceive; where *Second* down, is meant, that the *Second* Bell is the *whole Hunt*, and to *hunt* down the firſt *Change*; and the *Fourth* Bell is the *half Hunt*, and to *half hunt* up, that is, to move up towards the hindmoſt Bell the firſt time it moves at the beginning of the *Peal*; which are only directions in making the firſt *Changes*, for one *whole Hunt* and *half Hunt* may be hunted ſeveral wayes, either up or down at pleaſure. Firſt, I *hunt* down the *Second*.——— 12345

The *Second* being *hunted* down, the *Fourth*, which is the *half Hunt*, muſt be removed up over one Bell, thus.——— 21345 21354

The *half Hunt* being removed, I muſt *hunt* up the *Second*,

Second, as in these *Changes*.—

Now the *Fourth*, which is the *half Hunt*, being behind the *Extream* Bells, the next is to be an *Extream Change*, which may be made either between the two fartheſt Bells from the *half Hunt*, or the two neareſt to it; and after the *Extream Change* is made, the *whole Hunt* and *half Hunt* muſt be *hunted* as before. Theſe *Six-ſcore Changes* of *Second* and *Fourth*, I have ſet down at large, at the end of my directions to theſe *Changes* on five Bells.

12354
13254
13524
13542
31542
31524
31254
32154
23154
23145

In every *Six-ſcore*, the *Extream Changes* may be made either between the two fartheſt *Extream* Bells from the *half Hunt*, or between the two neareſt to it, obſerving to make all the *Extreams* in one *Six-ſcore* alike; that is, if you make the firſt *Extream Change* between the two fartheſt *Extream* Bells from the *half Hunt*, you muſt make all the following *Extreams* in the ſame *Six ſcore* between the two fartheſt *Ex-*

treams

tream Bells alſo; or if you make the firſt *Extream* in any *Six-ſcore* between the two neareſt to the *half Hunt*, you muſt make all the following *Extreams* in the ſame *Six-ſcore* between the two neareſt alſo.

The *Six-ſcore* plain and ſingle *Changes*, are to be *Rang* Eight-ſcore ſeveral wayes; for although there are but *Six-ſcore* ſeveral *Changes* on five *Bells*, yet by altering the *whole Hunt*, the *half Hunt*, and *Extreams*, the courſe of the *Changes* are ſo altered, that the ſame *Changes* doe not come all along together in any two of thoſe Eight-ſcore wayes.

With one *whole Hunt*, and *half Hunt*, the *Six-ſcore Changes* are to be *Rang*, or ſet down eight ſeveral wayes; one way, is by *hunting* the *whole Hunt*, and *half Hunt* both up; the ſecond way, is by *hunting* the *whole Hunt* and *half Hunt* both down; the third way, is in *hunting* the *whole Hunt* up, and the *half Hunt* down; the fourth way, is by *hunting* the *whole Hunt* down, and the *half Hunt* up; each of theſe four wayes is to be *Rang* two wayes more; one is, in making the *Extreams* between

the

the two fartheſt Extream Bells from the half Hunt, and the other way is in making them between the two neareſt; for Example, in making the treble the whole Hunt, and ſecond the half Hunt, the Six-ſcore are to be Rang eight ſeveral wayes (*viz.*)

Treble and ſecond both up ——	Extream Changes to be made between the 2 fartheſt Extream Bells from the half Hunt.
Treble and ſecond both down ——	
Treble down, and ſecond up ——	
Treble up, and ſecond down ——	

Treble and ſecond both up ——	Extream Changes to be made between the two neareſt Extream Bells to the half Hunt, which is called *Mediums*.
Treble and ſecond both down ——	
Treble down, and ſecond up ——	
Treble up, and ſecond down ——	

On five Bells there are 20 Hunts, (*i. e.*) a whole Hunt, and half Hunt twenty times, and not one; and the ſame whole Hunt, and half Hunt twice, as appears

tream Bells alſo; or if you make the firſt *Extream* in any *Six-ſcore* between the two neareſt to the *half Hunt*, you muſt make all the following *Extreams* in the ſame *Six-ſcore* between the two neareſt alſo.

The *Six-ſcore* plain and ſingle *Changes*, are to be *Rang* Eight-ſcore ſeveral wayes; for although there are but *Six-ſcore* ſeveral *Changes* on five *Bells*, yet by altering the *whole Hunt*, the *half Hunt*, and *Extreams*, the courſe of the *Changes* are ſo altered, that the ſame *Changes* doe not come all along together in any two of thoſe Eight-ſcore wayes.

With one *whole Hunt*, and *half Hunt*, the *Six-ſcore Changes* are to be *Rang*, or ſet down eight ſeveral wayes; one way, is by *hunting* the *whole Hunt*, and *half Hunt* both up; the ſecond way, is by *hunting* the *whole Hunt* and *half Hunt* both down; the third way, is in *hunting* the *whole Hunt* up, and the *half Hunt* down; the fourth way, is by *hunting* the *whole Hunt* down, and the *half Hunt* up; each of theſe four wayes is to be *Rang* two wayes more; one is, in making the *Extreams* between

the

the two fartheſt Extream Bells from the half Hunt, and the other way is in making them between the two neareſt; for Example, in making the treble the whole Hunt, and ſecond the half Hunt, the Six-ſcore are to be Rang eight ſeveral wayes (*viz.*)

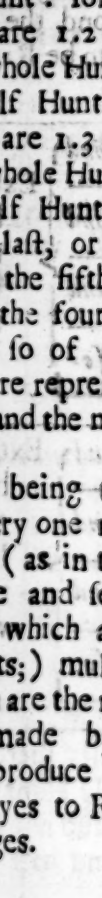
Treble and ſecond both up ——	Extream Changes to be made between the 2 fartheſt Extream Bells from the half Hunt.
Treble and ſecond both down ——	
Treble down, and ſecond up ——	
Treble up, and ſecond down ——	

Treble and ſecond both up ——	Extream Changes to be made between the two neareſt Extream Bells to the half Hunt, which is called *Mediums*.
Treble and ſecond both down ——	
Treble down, and ſecond up ——	
Treble up, and ſecond down ——	

On five Bells there are 20 Hunts, (*i. e.*) a whole Hunt, and half Hunt twenty times, and not one; and the ſame whole Hunt, and half Hunt twice, as appears

appears by the following Figures, where they ſtand two and two together; one of which is the whole Hunt, and the other the half Hunt: for Example, the 2 higheſt Figures are 1.2 where the treble is the whole Hunt, and the ſecond the half Hunt. The two next Figures are 1.3 where the treble is the whole Hunt, and the third the half Hunt; and likewiſe the two laſt, or loweſt Figures, are 5.4 the fifth is the whole Hunt, and the fourth the half Hunt; and ſo of all the reſt, the firſt Figure repreſenting the whole Hunt, and the next to it the half Hunt.

So that here being twenty Hunts, and every one making eight Six-ſcores (as in the Example of treble and ſecond) that is twenty (which are the number of Hunts;) multiplied by eight (which are the number of Six-ſcores made by each Hunt) does produce Eight-ſcore ſeveral wayes to Ring the Six-ſcore Changes.



In

In the Six-ſcore Changes are comprehended the Twenty-four, and the Six Changes: The Twenty-four Changes are made between the half Hunt, and the three Extream Bells; and the Six are made between the Extream Bells alone: The half Hunt in the Six-ſcore, is the whole Hunt in the Twenty-four; and there is one Change in the Twenty-four made every time the whole Hunt comes before and behind the Bells; and one Change in the Six made every Extream: So that the Six-ſcore rightly underſtood, is nothing elſe but hunting the half Hunt through every Change of the Six, which makes Twenty-four Changes; and then hunting the whole Hunt through each Change of the Twenty-four, which makes Six-ſcore; for inſtance, in the firſt Six-ſcore before ſet down, where the treble is the whole Hunt, the ſecond the half Hunt, and the 345 the Extream Bells.

I tak:

I take the Extream Bells, and set down the six Changes on them thus.——————

Now I take the first of the six, which is 345, and set the second (which was the half Hunt in the Six-score) to it, and hunt it up behind thus.——————

Now I take the second Change of the six, which is 435, and set it directly under 345, and the second Bell to it, and hunt it down thus.——————

The second being hunted through the Change, I take the third Change in the six, which is 453, and hunt the second Bell through it, as before.——————

And in the same course, the second being hunted through each Change of the six, will make Twenty-four, one Change of the six, hunting the second Bell through it, makes four Changes; so that the six Changes by hunting the second through

345
435
453
543
534
2345
354
3245
345
3425
3452
4352
4325
4235
2435
2453
4253
4523
4532

each

each of them, will make ſix times four Changes (*i. e.*) Twenty-four. And now hunt the Treble through each of the Twenty-four Changes, and 'twill make Six-ſcore; the firſt of the Twenty-four is 2345, take the Treble, and hunt it through it thus.——————

Now take the next Change of the Twenty-four, which is 3245, ſet it under the other Change, and hunt the Treble through it thus.——————

And in the ſame manner, hunting the Treble through each Change of the Twenty-four, will produce Twenty-four times five Changes, which makes Six-ſcore; one Change of the Twenty-four (in hunting the Treble through it) makes five Changes.

12345
21345
23145
23415
23451
32451
32415
32145
31245
13245

In every Six-ſcore on 5 Bells, there are 6 Extream Changes, there being twenty Changes from one Extream to another.

It would be an endleſs undertaking to ſet down all theſe Peals at large, but for the convenience of the Learner, I have ſet down ſome part of ſeveral of them, which may with eaſe be prickt out to the end of each Peal, as the Learner pleaſes.

Note,

Note, *That in the following Peals there is a Line drawn at each Extream Change between the Figures, to shew where the Extreams are made; as in the next Peal there is a Line drawn between the Figures just* 20 *Changes from the beginning of the Peal, the Change next after the Line is the Extream Change, which is* 14352, *and so of the rest; the Change next following each Line is the Extream.*

Treble and second both up, Extreams between the two fartheſt Extream Bells from the half Hunt.

12345	41352	24153	54312	25341	35241
21345	43152	24513	54321	52341	35214
23145	43512	24531	54231	52314	35124
23415	43521	42531	54213	52134	31524
23451	43251	42513	54123	51234	13524
32451	43215	42153	51423	15234	13254
32415	43125	41253	15423	15324	31254
32145	41325	14253	15243	51324	32154
31245	14325	14523	51243	53124	32514
13245	14235	41523	52143	53214	32541
13425	41235	45123	52413	53241	23541
31425	42135	45213	52431	53421	23514
34125	42315	45231	25431	53412	23154
34215	42351	45321	25413	53142	21354
34251	24351	45312	25143	51342	12354
34521	24315	45132	21543	15342	———
34512	24135	41532	12543	———	12345
34152	21435	14532	———	13542	
31452	12435	———	12534	31542	
13452	———	15432	21534	35142	
———	12453	51432	25134	35412	
14352	21453	54132	25314	35421	

Treble

Treble up, fifth down, Extreams between the two farthest Extream Bells from the half Hunt.

12345	25413	45123	41325	53214
21345	25143	45213	14325	53241
23145	21543	45231	———	35241
23415	12543	54231	13425	35214
23451	12453	54213	31425	35124
23541	21453	54123	34125	31524
23514	24153	51423	34215	13524
23154	24513	15423	34251	13254
21354	24531	———	34521	31254
12354	24351	15432	34512	32154
12534	24315	51432	34152	32514
21534	24135	54132	31452	32541
25134	21435	54312	13452	32451
25314	12435	54321	13542	32415
25341	———	45321	31542	32145
52341	14235	45312	35142	31245
52314	41235	45132	35412	13245
52134	42135	41532	35421	———
51234	42315	14532	53421	12345
15234	42351	14352	53412	
———	42531	41352	53142	
15243	42513	43152	51342	
51243	42153	43512	15342	
52143	41253	43521	———	
52413	14253	43251	15324	
52431	14523	43215	51324	
25431	41523	43125	53124	

Second

Second down, and fourth up, Extream between the two fartheſt Bells from the half Hunt.

12345	23145	43125
21345	32145	43152
21354	31245	———
12354	31425	45312
13254	31452	45321
13524	34152	43251
13542	34125	42351
———	34215	24351
31542	32415	23451
31524	23415	
31254	24315	
32154	42315	
23154	43215	

Second and third both down, Extream between the two fartheſt Extream Bells from the half Hunt.

12345	31542	13524	12543
21345	31524	13542	15243
23145	31254	15342	15423
32145	32154	15324	15432
31245	23154	15234	51432
31425	21354	12534	51423
34152	12354	21534	51243
———	13254	21543	52143

Third

Third and fifth both up, Extreams between the two farthest Extreams Bells from the half Hunt.

12345	23145	25143	52314
12435	32145	25134	52134
12453	32154	25314	52143
———	23154	23514	———
21453	21354	32514	52413
21435	21534	35214	52431
21345	21543	53214	

Fourth down, Treble up, Extreams between the two neareſt Extream Bells to the half Hunt.

12345	42315	25134	15243	45213
12435	42351	21534	15423	45231
14235	24351	21543	14523	54231
41235	23451	21453	41523	52431
42135	23541	24153	45123	52341
24135	23514	42153	54123	52314
21435	———	41253	51423	———
21345	25314	14253	51243	53214
21354	24531	12453	51234	53241
23154	42513	12534	52134	
23145	24513	12534	52143	
23415	25413	———	52413	
24315	25143	15234	54213	

Fifth down, treble up, Extream Changes between the two farthest Extream Bells from the Half Hunt.

12345	21354	25341	53241
12354	21345	23541	53214
12534	23145	23451	35214
15234	23154	23415	32514
51234	23514	32415	32154
52134	25314	32451	32145
25134	52314	32541	31245
21534	52341	35241	31254

Treble & second both down.		*Second & treble both down.*	
12345	13524	12345	23154
12354	31524	21345	23514
21354	35124	21354	32514
23154	35214	12354	35214
23514	35241	13254	35124
23541	35421	13524	35142
32541		13542	35412
32514		31542	
32154		31524	
31254		31254	
13254		32154	

The

The Changes on six Bells.

On six Bells there are Seven-hundred and twenty Changes to be made; but there are Peals of Six-score and Twelve-score Changes to be Rang on them. The Six-score Changes are to be made, by observing a whole Hunt and half Hunt, which are to be hunted in the same course, as in the Six-score on five Bells, and the Extream Changes to be made by the same Rule as they were on five Bells. The only difference between the Six-score on six Bells, and those on five, are this; whereas on five there are but three Extream Bells, on six there are four Extream Bells. And on five Bells, there are six Extream Changes in every Six-score; but on six, there are but four Extream Changes. And moreover, whereas in every Six-score on five Bells, the Changes were the same in each, although altered in course; but the Changes on six Bells are not the same in each, for several Six-scores has several Changes, one Six-score having many Changes which another has not, as in this Peal, treble and second both up; which is,

123456	435162	243615	134625
213456	431562	243651	314625
231456	413562	423651	341625
234156	143562	423615	346125
234516	143526	423165	346215
234561	413526	421365	346251
324561	431526	412365	342651
324516	435126	142365	342615
324156	435216	143265	342165
321456	435261	413265	341265
312456	432561	431265	314265
132456	432516	432165	134265
134256	432156	432615	132465
314256	431256	432651	312465
341256	413256	436251	321465
342156	143256	436215	324165
342516	142356	436125	324615
342561	412356	431625	324651
345261	421356	413625	234651
345216	423156	143625	234615
345126	423516	143652	234165
341526	423561	413652	231465
314526	243561	431652	213465
134526	243516	436152	123465
134562	243156	436512	
314562	241356	436521	123456
341562	214356		
345162	124356	346521	
345612		346512	
345621	124365	346152	
	214365	341652	
435621	241365	314652	
435612	243165	134652	

There

There are other Peals to be Rang on six Bells, as Six-scores on the five smallest, the tenor lying behind all the way. Treble and second, or treble and fifth, with the tenor lying behind, makes very good Musick: Of which Peals I need not give you any Example, these Six-scores being the same with those on five Bells set down before.

The Twelve-score Changes being only part of the Seven-hundred and twenty, and consequently the course of each being one and the same, I will therefore shew the course and method of the Seven-hundred and twenty, wherein the Twelve-score Changes are also included.

In Ringing the Seven-hundred and Twenty, there is a whole Hunt, a half Hunt, a quarter Hunt, and three Extream Bells; the whole Hunt and half Hunt does hunt in the same course and method, as they did in the Six-score on five Bells, and in the last Six-score; and the quarter Hunt removes in the same course under the half Hunt, as the half Hunt does under the whole Hunt: for instance, when the whole Hunt is hunted either before or behind the Bells, then

the half Hunt removes over one Bell; and when the half Hunt is removed before or behind the quarter Hunt and Extream Bells (at which time in a Six-score the Extream is made) then the quarter Hunt removes over one Bell, in the same course as the half hūt moves, when the whole Hunt is before or behind. An Example I will set down, which is 1.2 and 3 all up, that is to say, treble the whole Hunt, and to hunt up, second the half Hunt, and to half hunt up, and third the quarter Hunt, and to quarter hunt up 4,5 and 6 are Extream Bells; there is alwayes an Extream Change to be made, when the quarter Hunt comes before or behind the Extream Bells, there are two wayes to make the Extreams, which are the same here, as in the Six-score on five, and made by the same Rule, I will here make it between the two farthest Extream Bells from the quarter Hunt. Now the treble and second being the whole Hunt and half Hunt, must be hunted in the same course, as in the Six-score on five Bells, after this manner.

123456

123456	324156	342516	134562
213456	321456	342561	314562
231456	312456	345261	341562
234156	132456	345216	345162
234516	134256	345126	345612
234561	314256	341526	345621
324561	341256	314526	
324516	342156	134526	

The half Hunt being hunted up, the third is to remove up over one Bell, and then the whole Hunt and half Hunt to remove again thus.

435621	431526	413256	243561
435612	435126	143256	243516
435162	435216	142356	243156
431562	435261	412356	241356
413562	432561	421356	214356
143562	432516	423156	124356
143526	432156	423516	
413526	431256	423561	

The whole Hunt and half Hunt being hunted down, the quarter Hunt must remove up over the fifth, and then the whole Hunt and half Hunt must hunt up again, as in the following Changes.

124536	412536	453126
214536	142536	351326
241536	145236	415326
245136	415236	145326
245316	451236	145362
245361	452136	415362
425361	452316	451362
425316	452361	453162
425136	453261	453612
421536	453216	453621

The whole Hunt and half Hunt being hunted up, the quarter Hunt must be removed quite up over the sixth, as in this Change 456321, *the quarter Hunt being hunted up behind the Extream Bells, yet the Extream Change is not to be made, until the whole Hunt and half Hunt have both removed thorough the Bells, as in these Changes.*

456312	456231	425163
456132	452631	425613
451632	452613	425631
415632	452163	245631
145632	451263	245613
145623	415263	245163
415623	145263	241563
451623	142563	214563
456123	412563	124563
456213	421563	

It

It is to be obſerved for a conſtant Rule, that when the quarter Hunt removes either quite up behind the Extream Bells, or down before them, the whole Hunt and half Hunt muſt hunt through the Bells before the Extream Change is to be made, as appears by the laſt Changes.

The Extream Change is now to be made between the 4 and 5, being the two fartheſt Extream Bells from the third, which is the quarter Hunt, thus.—

125463

The Extream being made, the whole Hunt, half Hunt, and quarter Hunt muſt be hunted as before; and firſt the whole Hunt and half Hunt are to be hunted up, as in theſe Changes.

215463	152463	541623
251463	154263	514623
254163	514263	154623
254613	541263	154632
254631	542163	514632
524631	542613	541632
524613	542631	546132
524163	546231	546312
521463	546213	546321
512463	546123	

The whole Hunt and half Hunt being hunted up, the quarter Hunt must hunt down under the sixth, which is the next Bell to it, and then the whole Hunt and half Hunt must hunt down again, as in the Changes following.

543621	541326	514236	254361
543612	543126	154236	254316
543162	543216	152436	254136
541362	543261	512436	251436
514362	542361	521436	215436
154362	542316	524136	125436
154326	542136	524316	
514326	541236	524361	

The quarter Hunt must be hunted down under the Fourth, and then the whole Hunt and half Hunt are to hunt up again, as appears by these Changes.

125346	523146	532416	153462
215346	521346	532461	513462
251346	512346	534261	531462
253146	152346	534216	534162
253416	153246	534126	534612
253461	513246	531426	534621
523461	531246	513426	
523416	532146	153426	

Now the quarter Hunt is to be hunted down before the Extream Bells, and then the whole Hunt and half Hunt to hunt again before the Extream Change is made.

354621	351426	315246	235461
354612	354126	135246	235416
354162	354216	132546	235146
351462	354261	312546	231546
315462	352461	321546	213546
135462	352416	325146	123546
135426	352146	325416	
315426	351246	325461	

The quarter Hunt being before the Extream Bells, the Extream Change is to be made:

Here are just Twelve-score Changes already set down, and the Bells may either be brought round, and so make an end at the Twelve-score, or else proceed forward to the end of the Seven hundred and twenty. If the Bells are not brought round here, they cannot come round, until the Seven-hundred and twenty Changes are all made, and then they come round in course. To bring the Bells round at the end of these Twelve-

Twelve-score Changes, the Extream is to be made between the 5 and 4, which were the two Bells that made the last Extream Change, and brings them round in their right places again, as appears by these Figures 123456.

There are but two Extream Changes in every Twelve-score, wherein 'tis constantly observed, that the last Extream Change is to be made between those two Bells which made the first Extream, otherwise the Bells would not come round at the end of the Twelve-score.

Here I have somewhat deviated from my directions before, in making the Extream Changes; for in the last Change, which is 123456, I made the Extream between the two neareſt Extream Bells to the quarter Hunt; but the Twelve-score Changes are an imperfect Peal, being only a third part of the Changes which are to be made on six Bells, and therefore not to be brought round, unless the last Extream Change is made out of course. To have proceeded forward in the 720, the last Extream should have been made between the 4 and 6, which are the two farthest Extream Bells from the quarter Hunt, the Change next before

the

the Extream, is 123546; now the 4 and 6 making an Extream Change, the Bells ſtand thus, 123564; the Extream being made, the whole *hunt*, half *hunt*, and quarter *hunt* are to be hunted as before, and the Extream Changes to be made between the two fartheſt Extream Bells from the quarter *hunt*, which courſe will bring the Bells round in their right places at the end of the 720. In every 720, there are ſix Extream Changes, there being Six-ſcore Changes between each. The Twelve-ſcore Changes are to be Rang with any whole *hunt*, half *hunt*, and quarter *hunt*, obſerving to make the laſt Extream Change between thoſe two Bells which made the firſt.

The 720 plain Changes are to be rang or ſet down One thouſand four hundred and forty ſeveral wayes, by altering the whole *hunt*, half *hunt*, quarter *hunt*, and Extream Bells (but the courſe of each is the ſame with that which is before ſet down) which I thus demonſtrate. On 6 Bells, there are 120 ſeveral *hunts*, (*viz.*) a whole *hunt*, half *hunt*, and quarter *hunt* Six-ſcore ſeveral times, and not one and the ſame whole *hunt*, half *hunt*, and quarter *hunt* twice, as appears by theſe Figures. —— —— —— 123

123	213	312	412	512	612
124	214	314	413	513	613
125	215	315	415	514	614
126	216	316	416	516	615
132	231	321	421	521	621
134	234	324	423	523	623
135	235	325	425	524	624
136	236	326	426	526	625
142	241	341	431	531	631
143	243	342	432	532	632
145	245	345	435	534	634
146	246	346	436	536	635
152	251	351	451	541	641
153	253	352	452	542	642
154	254	354	453	543	643
156	256	356	456	546	645
162	261	361	461	561	651
163	263	362	462	562	652
164	264	364	463	563	653
165	265	365	465	564	654

These Figures ſtand three and three together, each three repreſents the three Hunts; that is, the firſt is the whole Hunt, the ſecond Figure the half Hunt, and the third the quarter Hunt; for Example, the firſt three are 1 2 3, the treble is the whole Hunt, the ſecond the half Hunt, and the third the quarter Hunt:

The next three Figures are 124, there the treble is the whole Hunt, the ſecond the half Hunt, and the fourth the quarter Hunt; and the laſt three Figures are 654, where the ſixth is the whole Hunt, the fifth the half Hunt, and the fourth the quarter Hunt, and ſo of all the reſt.

With one whole Hunt, half Hunt, and quarter Hunt, the Seven-hundred and twenty Changes are to be Rang, or ſet down twelve ſeveral wayes; for inſtance, take the firſt three Hunts in theſe Figures, which are 123, where the treble is the whole Hunt, the ſecond the half Hunt, and the third the quarter Hunt, which may be hunted ſix ſeveral wayes, as followeth.

Treble, ſecond and third, all up——
Treble and ſecond up, third down-
Treble up, ſecond and third down
Treble, ſecond and third, all down-
Treble and ſecond down, third up-
treble down, ſecond and third up——

Each of theſe are to be Rang two wayes, one is to make the Extreams between the two fartheſt Extream Bells from the quarter Hunt, and the other way is to make the Extream between the two next Bells to the quarter Hunt.

By

By treble, ſecond and third all up, is meant, that the treble is the whole *hunt*, and to hunt up the firſt Change at the beginning of the Peal; the ſecond is the half *hunt*, and to half hunt up; that is, to move up towards the hindmoſt Bells the firſt time it moves at the beginning of the Peal; and the third is the quarter *hunt*, and to move likewiſe toward the hindmoſt Bells the firſt time it removes. And by treble and ſecond up, and third down, is meant, that the treble and ſecond are to move up towards the hindmoſt Bell, the firſt time each removes at the beginning of the Peal; and the third being the quarter *hunt*, is to move down the firſt time, which are only directions for moving the *hunts* at firſt, becauſe they may be hunted either up or down.

Sometimes it happens, that the *hunts* cannot be hunted that way which is propoſed, as in the 720, treble, ſecond and third all down. ——————123456

The whole *hunt* which is the treble, ſhould now be hunted down; but it being already before the Bells, inſomuch that it can be removed no lower; I ſhould therefore remove the half *hunt* down,

down, but that being alſo down as low as it can go, I ſhould move the quarter *hunt*; and that being alſo down before the Extream Bells, I can move it no lower, unleſs I ſhould move it down under the ſecond, which is the half *hunt*, which muſt not be done; for when the quarter *hunt* is down next before the *Extream Bell*, it muſt be removed no lower; and when it is up next behind the *Extream Bell*, it is to be removed up no higher; therefore it being now before the *Extream Bell*, the *Extream Change* is to be made the firſt of all; and when that is done, the treble, ſecond and third muſt be hunted up in courſe. Or if you make treble and ſecond down, and third up, then the firſt Change is to be made, by moving the quarter *Hunt* up over one *Bell*. And again, if you make Treble and Tenor both up, and Third down, firſt hunt up the Treble, and then the Tenor, which is the half *Hunt*, ſhould be moved up; but it being already behind, the quarter *Hunt*, which is the Third, muſt move under one *Bell*, and then the whole *Hunt* and half are to hunt in courſe after each other: Many Examples of this Nature I could ſet

down, which for brevity ſake I omit.

I might demonſtrate how the 720 are to be Rang twelve wayes, with each of the Six-ſcore Hunts, as I did that of treble, ſecond and third; but I think that altogether needleſs, ſince that Example makes it moſt plain and eaſie to be underſtood: But I will give a general Rule for hunting any whole Hunt, half Hunt, and quarter Hunt, ſo as to produce ſix ſeveral wayes to Ring the 720 Changes, which is this:

Whole Hunt, half Hunt, and quarter Hunt, all hunted up.
Whole Hunt, and half Hunt hunted up, and quarter Hunt down.
Whole Hunt hunted up, half Hunt and quarter Hunt down.
Whole Hunt, half Hunt, and quarter Hunt hunted down.
Whole Hunt and half Hunt hunted down, and quarter Hunt up.
Whole Hunt hunted down, half Hunt and quarter Hunt hunted up.

Which is a general Rule to Ring the 720 ſix wayes on any one of the Six-ſcore

ſcore Hunts; each of which ſix wayes, may be Rang two wayes more, by altering the *Extream Changes*, one of which is to make the *Extream Changes* between the two next *Extream Bells* to the quarter Hunt, and the other way is to make the *Extreams* between the two fartheſt *Extream* Bells from it.

The 720 Changes are to be Rang 12 wayes with one whole Hunt, half Hunt, and quarter Hunt; ſo that with the Six-ſcore Hunts, it is to be Rang Six-ſcore times twelve wayes, which makes One thouſand four hundred and forty ſeveral wayes to Ring this 720 plain Changes.

In the 720, the half Hunt, the quarter Hunt, and the three *Extream* Bells, makes the Six-ſcore Changes on 5 Bells in a perfect courſe, the half Hunt and quarter hunt in the 720, being the whole Hunt and half Hunt in the Six-ſcore; for Example, take the 23456, and ſet down the Six-ſcore Changes on them, making the ſecond the whole hunt, and the third the half hunt; which when you have ſet down, then take the Treble, and hunt it through every Change of that Six-ſcore, and it will make 720 Changes, the ſame with thoſe which I have

ſet down before. The Twenty-four Changes on four Bells, and the ſix changes on three Bells, have alſo a perfect courſe in the 720, in the ſame manner as I told you they had in the Six-ſcores on five Bells. There is alwayes one change in the Six-ſcore made every time the whole hunt comes before or behind the bells, which is every ſixth change; and there's one change of the Twenty-four made, every time the whole hunt and half hunt comes before or behind the bells, which is once in thirty changes; and one change of the ſix made every extream, that is once in ſix-ſcore changes. You may take the ſix-ſcore changes on five bells, treble the whole, and ſecond the half hunt, before ſet down; and hunt the ſixth bell through every change of that ſix-ſcore, which will make the 720 changes; Tenor the whole hunt, Treble the half hunt, and Second the quarter hunt.

This is not material for a Learner to know, it being only for the inſtructions of thoſe that know how to Ring it, but yet are ignorant of the true grounds thereof; therefore I have diſſected it, and ſhewed the grounds of each part of it.

In

In this place, I will add a word or two to thoſe that practiſe to Ring the Changes.

THey that Ring the extream bells in the Twenty-four changes, muſt mind and obſerve the motion of the hunt, that they may the better know when to make the extream changes; and likewiſe in a ſix-ſcore on five bells, he that Rings the half hunt, muſt obſerve the motion of the whole hunt; and they that Ring the extream bells, muſt obſerve the motions both of the whole hunt, and half hunt, that they may know when the half hunt is to move, and alſo when to make the extream changes; or elſe he that does Ring the half hunt, may give notice of the extream changes (by ſaying *Extream*) the change next before the extream is to be made. The ſame is to be obſerved in the changes on ſix bells. The whole hunt is the eaſieſt bell to Ring in any changes, and the half hunt is more plain and eaſie to Ring, than an extream bell. All changes are to be Rang either by *walking* them (as the

term is) or else Whole-pulls, or Half-pulls. By *walking* them, is meant, that the bells go round, four, six, eight times, or more, in one change, which is commonly used by young Practisers; it may be sometimes on five bells, Ringing the Twenty-four changes on the treble, second, third, and fourth, the fifth bell striking behind every change; and many other changes of the like nature may be practised this way by young Ringers. Whole-pulls, is to Ring two Rounds in one change, that is, Fore-stroke and Back-stroke, and in a change; so that every time you pull down the bells at Sally, you make a new change differing from that at the Back-stroke next before; this Whole-pulls was altogether practised in former time, but of late there is a more quick and ready way practised, called Half-pulls, which is—only once round in a change, that is, one change made at the Fore-stroke, and another at the Back-stroke, which way is now altogether in use (unless it be at some great bells, which are too weighty to be managed up so high a Compass at the Back-stroke, as Half-pulls requires) it being now a common thing in *London*

to Ring the 720 *Changes*, *Trebles and Doubles*, and *Grandſire Bob*, *Half-pulls*, (which is commonly Rang with ſo round and quick a Compaſs, that in the ſpace of half an hour, or little more, the 720 Changes are Rang out from the beginning to the end.) And alſo the Six-ſcores *Doubles and Singles*, *Old Doubles*, *Grandſire*, and many other croſs Peals on five bells, are commonly Rang Half-pulls.

In Ringing Half-pulls, ſome Peals do cut Compaſs, that is—the whole *hunt* comes to lead at the Back-ſtroke, to remedy which, make the firſt change of the Peal at the Back-ſtroke.

By theſe following Rules, you ſhall know what Peals do cut Compaſs, and what not (*i. e.*) of plain and ſingle changes. *On ſix Bells*,

In hunting either the treble, the third, or the fifth bells down, cuts Compaſs; hunting them up, does not cut Compaſs.

In hunting the ſecond, fourth, or ſixth bells up, cuts Compaſs; but hunting them down, does not cut Compaſs.

Theſe Rules (leaving out the Tenor) ſerves for five bells; and leaving out the fifth and Tenor, they ſerve for four bells.

The
Twelve ſcore LONG-HUNTS:
Or the
ESQUIRE'S Twelve-ſcore.

THis Peal is to be Rang on ſix bells, having two whole *hunts*, and one half *hunt*; the common way of Ringing, it is to make the fifth and Tenor the whole *hunts*, and the Treble the half *hunt*. The Tenor and fifth does each *hunt* down by turns, and when either of them comes down before the bells, it leads twice, and then *hunts* up again.

The Treble, ſecond, third, and fourth, makes the Twenty-four changes, one of which is made every time either of the whole *hunts* leads: For inſtance, the Tenor is firſt to be *hunted*

ed down, thus.——————

The tenor being hunted down, and lying before the bells, there is one change in the Twenty-four now to be made between treble and ſecond, thus.——————

The tenor is to be hunted up into its place, and the fifth hunts down.——————

The fifth being now before the bells, there is another change in the Twenty-four to be made between the treble and third, as in this change.—

The fifth is now to hunt up, and the tenor to hunt down again, in which courſe they continue to the end of the Peal, obſerving to make an extream change, when the treble (which is the hunt in the Twenty-four) comes before or behind the extream bells.

123456
123465
123645
126345
162345
612345
621345
261345
216345
213645
213465
213456
213546
215346
251346
521346
523146
253146
235146
231546
231456
231465
231645

This Peal may be Rang, by making the Twenty-four changes Doubles and Singles,

Singles, in the place of the Twenty-four plain Changes, and many other wayes, which I leave to the Learner to practiſe.

The Variety of Changes on any Number of Bells.

THe changes on bells do multiply infinitely. On two bells there are two changes. On three bells are three times as many changes as there are on two; that is—three times two changes, which makes ſix. On four bells there are four times as many changes as on three; that is—four times ſix changes, which makes Twenty-four. On five bells there are five times as many changes as there are on four bells; that is—five times Twenty-four changes, which makes Six-ſcore. On ſix bells are ſix times as many changes as there are on five; that is—ſix times Six-ſcore changes, which makes Seven-hundred and twenty: And in the ſame manner, by increaſing the number of bells, they multiply innumerably, as in the Table of Figures next following; where each of the

the Figures in the Column of the left hand, ſtanding directly under one another (which are 1.2.3.4.5.6.7.8.9.10.11.12.) do repreſent the number of bells; and the Figures going along towards the right-hand, directly from each of thoſe twelve Figures, are the number of changes to be rung on that number of bells which the Figure repreſents: For Example, the uppermoſt Figure on the left hand is 2, which ſtands for two bells; and the Figure next to it on the right hand is alſo 2, which ſtands for two changes; that is to ſay, on two bells there are two changes. The next Figure below in the left Column is 3, which ſtands for three Bells; and the Figure next to it on the right hand is 6, which ſtands for ſix changes; that is—on three bells are ſix changes, and ſo of the reſt as follows.

bells	*changes.*
2	2
3	6
4	24
5	120
6	720
7	5040
8	40320
9	362880
10	3628800
11	39916800
12	479001600

The loweſt of theſe figures are 479001600, that is, Four hundred ſeventy nine Millions, one thouſand ſix hundred, which are all the changes that can be made on twelve bells: And ſuppoſing that twelve men ſhould take 12 bells with intent to ring the changes on them, they would be Seventy five Years, ten Months, one Week and three Dayes in ringing them, according to the proportion of ringing 720 changes in an hour; reckoning 24 hours to the day, and 365 dayes in the Year.

Having

Having given Directions for all sorts of plain and single Changes, I will now proceed to Cross-Peals, and first to Doubles and Singles on four Bells.

Doubles and Singles on four Bells.

ON four bells there are 24 changes to be made Doubles and Singles, wherein are twelve double changes, and 12 single; next to every double change, there is a single; so that 2 double changes do not come together in any place throughout the Peal, neither does two single changes at any time come together; but one change is double, and the next is single, to the end of the Peal. Every double change is made between the four bells; that is—there are two changes made at one time, between the bells in treble and seconds places, and the bells in third and fourths places. Every single change is made between the two bells in the middle (*i. e.*) in seconds and thirds places; excepting the extream changes, which are single, and made between the two farthest extream bells from the Hunt. An Example

I here

I here ſet down, making the treble the Hunt, and I hunt it up at the beginning of the Peal (for it may be hunted either up or down at pleaſure) and I make an extream change every time the whole Hunt comes before the bells. In ringing it, 'tis obſerved, that every bell hunts in courſe, and lies twice before, and twice behind, except only when the extream is to be made, and then the two fartheſt extream bells from the Hunt, does make a dodge, and then moves in their former courſe, as in theſe changes.——

Now the hunt is before the bells, there is an extream change made between the two fartheſt bells from it, which are the 2 and 4, thus.——

The extream change being made, the bells are to move, as before, obſerving to make an extream change every time the whole hunt comes before the bells.

In this laſt Twenty-four, the treble is hunted up at the beginning; it may be rang by hunting it down, which is to be done, by making the firſt a ſingle change, and then hunt it up as before.

1234
2143
2413
4231
4321
3421
3142
1324
1342
3124
3214
2341
2431
4213
4123
1432
1423
4132
4312
3421
3241
2314
2134
1243
1234

With

With one hunt this Peal may be rang six wayes (viz.) three wayes in hunting it up at the beginning of each Peal, and the other three wayes by hunting it down; the three wayes in hunting it up, differs only in making the extream changes; in one of the three wayes you must make an extream change every time the hunt comes before the bells to lead, as in the Twenty-four changes before set down. Another way is to make an extream every time the hunt comes behind. And the third way, is to make an extream every time the hunt comes before and behind the bells. The three wayes in hunting it down, are to be rang by making the extream changes, as in the three wayes before; in hunting one bell, there are six wayes to ring this Peal; therefore with the four bells (in making each of them to hunt) there are four times six wayes to ring it, which makes Twenty-four several wayes. And for the benefit of the Learner, I have set down certain Rules, shewing how to begin any of the aforesaid Peals (viz.)

In hunting either the treble or third up, the first change is double; but in hunting either of them down, the first is single.

In

In hunting the second or the fourth up, the first change is single; but in hunting either of them down, the first change in each Peal must be double.

Doubles and Singles on five Bells.

THere is a Peal to be rang on five bells, called Doubles and Singles, wherein are Six-score several changes, sixty of which are double changes, and sixty are single; the double and single changes are so intermixt, that two double changes does not at any time come together in the Six-score; neither are two single changes made next to each other in any part of this Peal, but one change is double, and the next single, in which course they are made to the end. Every double change is made between the four foremost bells (*i.e.*) in treble, second, third, and fourth places. When the whole hunt is hunting up, each single change is made between the whole hunt, and the next bell above it. In hunting down the single changes are made between the whole hunt, and the next bell below it, the whole hunt being alwayes one

one of the two bells which makes every ſingle change, except only when it leads, and then the ſingle change is made in third and fourths places; but the extream is alſo a ſingle change, and made (when the whole hunt leads) between the two fartheſt extream bells from the half hunt; the half hunt is to lie either before or behind the extream bells, when the extream changes are made, of which I ſhall ſhew you more anon.

In this Peal there is a whole hunt, a half hunt, and three extream Bells; the whole hunt in a direct courſe does hunt up and down, and lies twice before, and twice behind all the way; every other bell leads twice together throughout the Peal.

And when the whole hunt leaves the thirds place, hunting up, then every bell that comes into ſecond and thirds places, does lie in each of theſe places twice together, until the whole hunt comes down again into thirds place, at which time the bell in fourths place lies there twice, and then makes a dodge with the bell in thirds place (unleſs an extream change is to be made) and ſo removes directly down before the bells. And

that bell which comes into the tenors place (when the whole hunt leaves that place hunting down) lies ſtill there, until the whole hunt removes up into that place again, except only when the extream is made behind, and then the bell in fourths place moves into tenors place, and lies there until the whole hunt moves up into that place.

With one whole hunt, and half hunt, this Peal may be rang ſix wayes, in three of which the whole hunt is to be hunted up at the beginning of each Peal, which three ways differs only in making the extream changes. One way, is to make an extream change every time the half hunt comes before the extream bells, as in the following Six-ſcore. The ſecond way, is to make an extream change every time the half hunt comes behind the extream bells. And the third way, is to make an extream every time, the half hunt comes before and behind the extream bells. In this laſt way there are ſix extreams in each Peal, but in the other two ways there are but three extreams in each Peal.

The three wayes aforeſaid, are to be rang, by hunting up the whole hunt; but it may be rang three wayes more, in hunting

ing down the same whole hunt, in which three wayes the extreams are to be made, as I shewed you before. The whole hunt is alwayes to lead when every extream change is made.

This Peal I have set down at large, making the treble the whole hunt, the second the half hunt; and an extream change every time the half hunt comes before the extream bells, as in the following changes. I have drawn a Line between the figures at the extream changes, that next below the Line is the extream.

12345	51342	21543	34152	23154	54312
21435	53142	25143	43512	32514	54321
24135	35412	52413	43521	32541	45231
42315	35421	52431	34251	23451	45213
42351	53241	25341	34215	23415	54123
24531	53214	25314	43125	32145	51423
24513	35124	52134	41325	31245	15243
42153	31524	51234	14235	13425	15423
41253	13254	15324	14325	13245	51243
14523	13524	15234	41235	31425	52143
14253	31254	51324	42135	34125	25413
41523	32154	53124	24315	43215	25431
45123	23514	35214	24351	43251	52341
54213	23541	35241	42531	34521	52314
54231	32451	53421	42513	34512	25134
45321	32415	53412	24153	43152	21534
45312	23145	35142	21453	41352	12354
54132	21345	31542	12543	14532	———
51432	12435	13452	———	14352	12345
15342	———	13542	12534	41532	
15432	12453	31452	21354	45132	

This Peal may be rang Six-score several wayes; there being twenty hunts on five bells (that is—a whole hunt, and half hunt twenty times on five bells, and not one and the same whole hunt and half hunt twice, as I shewed more at large in the plain changes on five bells before set down) and with each hunt, that is, with one whole hunt and half hunt, it may be rang six wayes; so that multiply twenty, (which are the number of hunts) by six, (which are the number of Peals to be rang on each hunt) and it will produce Six-score several wayes to ring it.

It may be prick't, or rang Six-score several wayes more, by making the extream changes when the whole hunt lies behind the bells, but those wayes are never practised; neither do I think it material to say any thing more of them in this place, having only inserted this, to shew the great variety there is in this Peal. It being somewhat difficult to know the true way of beginning each Peal, I have therefore set down certain Rules, shewing how the first changes in each are to be made.

In hunting the treble, the third, or the fifth bells up, the first change in each Peal is to be made double. In

In hunting the treble down, the first change is single in third and fourths places, unless the half hunt lies so, as that the extream is to be made.

In hunting the third or fifth down, the first change is to be made single, between the whole hunt, and the next bell below it.

In hunting up the second or fourth, the first change in each Peal is single, between the whole hunt, and the next bell above it.

In hunting down the second or fourth, the first change is to be made double.

Every double change in all the Peals of Doubles and Singles, is made between the four foremost bells; that is—in treble, second, third and fourths places.

Tendring's Six-score on five Bells.

IN this Peal are contained Six-score changes, which are Doubles and Singles, there being sixty double changes in it, and sixty single, which are so intermixt, that two double changes does not come together in any part of the Peal; neither are there 2 single changes at any

time made together, but one change is double, and the next to it is ſingle; in which courſe the changes are all made to the end of the Peal. Every ſingle change is made between the 2 hindmoſt bells. There is a whole hunt and half hunt in it. *The obſervation in ringing it, is this: When the whole hunt lies before the bells, and is to hunt up, firſt it moves up into ſeconds place, where it lies twice; then into thirds place, where it lies alſo twice; then into the fourths place, where it lies once; and in the tenors place once: Then it makes a dodge with the bell in fourths place, after which it lies twice behind; then it moves down into fourths place, and makes a dodge with the bell in tenors place, and then moves down into thirds place, where it lies twice, and in the ſeconds place twice, ane then it leads four times; after which, it hunts again, as before. The courſe of the other four bells, are exactly the ſame with that of the whole hunt, in moving up and down, except only when the Bob-changes are made, and then they differ; but after the Bobs are made, their courſe is the ſame as before; every bell lies four times together before the bells, and twice in the ſeconds*

conds place without any alteration. In this Peal are two ſorts of Bobs; one of which is called a double Bob, and the other a ſingle Bob. The Rule for making the double Bob is this, when the whole hunt is hunting down, and lies in the ſeconds place, and the half hunt lies behind, then there's a double Bob; that is, two Bob-changes; one of which is made the next change, wherein the whole hunt moves down to lead; where having led four times, there is then another Bob-change to be made, in which the whole hunt moves up into the ſeconds place. The Rule for making the ſingle Bob, is this, when the whole hunt has led four times, and the half hunt lies in thirds place; then the next change following is a ſingle Bob, that is—one Bob-change, in which the whole hunt moves out of the trebles place up into the ſeconds place, every Bob is a double change, and made between the two firſt, and two laſt bells, the bell in thirds place lying ſtill when each Bob is made, where it lies four times together, and then moves down; every time the whole hunt comes before the bells, there is either a ſingle Bob, or a double Bob made.

At every double Bob, those two bells that do dodge behind at the first Bob-change, continues dodging until the whole hunt moves up, and parts them: And likewise at the single Bob, those 2 bells which do dodge behind at the Bob-change, continue dodging until the whole hunt moves up, and parts them, as in the following changes, where the treble is the whole hunt, the tenor the half hunt, and the first is a Bob-change, being supposed to be the second Bob-change of a double Bob.

12345	21543	31425	35124	42135	54213
21354	21534	34152	35142	24315	54231
21345	25143	34125	53412	24351	52413
23154	25134	43215	53421	23415	52431
23145	52314	43251	54312	23451	25341
32415	52341	42315	54321	32541	25314
32451	53214	42351	45231	32514	23541
34215	53241	24531	45213	35241	23514
34251	35421	24513	42531	35214	32154
43521	35412	25431	42513	53124	32145
43512	34521	25413	24153	53142	31254
45321	34512	52143	24135	51324	31245
45312	43152	52134	21453	51342	13254
54132	43125	51243	21435	15432	13245
54123	41352	51234	12453	15423	12354
51432	41325	15324	12435	14532	12345
51423	14352	15342	14253	14523	
15243	14325	13524	14235	41532	
15234	13452	13542	41253	41523	
12543	13425	31524	41235	45132	
12534	31452	31542	42153	45123	

This Peal was made out of Grandsire *on five bells, the Bob changes in this, being the same with those in* Grandsire, *and made by the same Rule.*

Paradox on five Bells.

THis Peal of *Paradox* is to be rang on five bells, wherein are Six-score changes, they are Doubles and Singles; that is—one change double, and another single; in which course they are made to the end of the Peal. Every single change is made in second and thirds places, except only when the whole Hunt leads, and then 'tis made in third and fourths places; but the extream Changes are (also single) and made between the two fartheſt extream bells from the half Hunt; the whole Hunt lies before the bells, when every extream change is made. Every bell lies four times together before, and four times behind, except only when the extream changes are made behind. There is a whole Hunt, a half Hunt, and three extream bells; the course of the whole Hunt is this, it being before the bells,

first

first it moves up into the second and thirds places, then it makes a dodge with the bell in seconds place, and moves out of the thirds place up into fourths, where it lies alwayes twice, then moves up behind, where it lies four times, and then moves down into fourths place, where having lay twice, it hunts down into seconds place, and makes a dodge with the bell in thirds place, and then moves down before the bells, where having lay twice, it hunts as before; each of the other bells has the same course (in hunting up and down) as the whole Hunt until the whole Hunt leads, at which time every bell that comes into seconds place lies there twice together, unless the extream change is to be made in second and thirds places.

In this following Peal, the treble is the whole Hunt, and the second the half Hunt; the extream changes are made, when the half Hunt lies before the extream bells.

12345

12345	23451	14235	32415	31254
21435	24351	14325	34215	32145
24135	23415	13452	32451	31245
21453	24315	13542	34251	13425
24153	42135	31452	43521	13245
42513	41235	34152	45321	12354
45213	42153	31425	43512	———
42531	41253	34125	45312	12345
45231	14523	43215	54132	
54321	14253	42315	51432	
53421	12435	43251	54123	
54312	———	42351	51423	
53412	12453	24531	15243	
35142	21543	25431	15423	
31542	25143	24513	14532	
35124	21534	25413	14352	
31524	25134	52143	41532	
13254	52314	51243	45132	
13524	53214	52134	41523	
15342	52341	51234	45123	
15432	53241	15324	54213	
51342	35421	15234	52413	
53142	34521	12543	54231	
51324	35412	———	52431	
53124	34512	12534	25341	
35214	43152	21354	23541	
32514	41352	23154	25314	
35241	43125	21345	23514	
32541	41325	23145	32154	

I have drawn a Line between the Figures at the extream changes, that next below each Line is the extream; the first extream is Forty changes from the beginning.

This Peal is grounded on the Twenty-four changes Doubles and Singles on four bells. The half Hunt, and three extream bells in this Peal, makes the Twenty four changes in a perfect course. There are four changes made in the Twenty-four every time the whole Hunt leads, which coming before the bells six times in the Six-score, and each time lying there four times together, makes six times four changes, which is Twenty four. 'Tis easily made out, if you take every change that is made when the whole Hunt is before the bells in the Six-score before, and set the changes down by themselves (leaving out the treble) where you will find, that the second, third, fourth and fifth, make the Twenty-four changes Doubles and Singles, in a perfect course; second is the Hunt, and the extreams are made when the Hunt is before.

Paradox may be rang Six-score several wayes. With one whole Hunt, and half Hunt, it may be rang six wayes,

in

in three of which the whole Hunt is to be hunted up; and in the other three wayes it is to be hunted down, in which six wayes the extream changes are to be made by the same Rules, and in the same manner, as I shewed before in the Six-score Doubles and Singles on five bells; so that with the twenty Hunts, it may be prick't or rang twenty times six wayes, which makes Six-score.

This Peal may be prick't Six-score wayes more, by making the extreams when the whole Hunt lies behind the bells, but that being never practised, I will say no more of it. I have here set down some general Rules for beginning the several Peals of *Paradox* by the former course (*i.e.*) in making the extreams when the whole Hunt is before the bells.

In hunting the treble up, the first change is double between the four first bells, thus.——————12345.21435

In hunting the treble down, the first change is single in third and fourths places (*thus.*—12345.12435) *unless the half Hunt lies so, that the extreams may be made.*

Second

Second up, the first change is single in second and thirds places, thus.—12345. 13245.

Second down, the first change is double between the four first bells.

Third up, the first change is double between the four first bells.

Third down, the first change is single in second and thirds places.

Fourth up, the first change is double between the four hindmost bells, thus.—12345.13254.

Fourth down, the first change is double between the four first bells.

Fifth up, the first change is single in second and thirds places.

Fifth down, the first change is double between the four hindmost bells.

If you observe these Rules aright, together with my former directions, you may with much ease prick down any Peal of Paradox.

PHOENIX.

PHOENIX. On five Bells.

THis Peal has Six ſcore changes in it, which are Doubles and Singles; the tenor is the whole Hunt, and the fourth the half Hunt. Every bell lies twice before, and four times behind; every ſingle change is made in ſecond and thirds places, and every bell that comes into fourths place, lies there twice together, until the tenor comes behind; at which time, the fourth lying in the ſeconds place, the next ſingle change is made in third and fourths places; but the tenor lying behind, and the fourth in thirds place, then the two next following ſingle changes are in third and fourths places.

12345

12345	21543	14325	15423	12453
21354	25143	41235	14523	21435
23154	52413	42135	41532	21345
32514	54213	24153	45132	12435
35214	45231	21453	54312	12345
53241	42531	12543	53412	
52341	24351	15243	35421	
25431	23451	51234	34521	
24531	32415	52134	43251	
42513	32145	25314	42351	
45213	23415	23514	24315	
54123	23145	32541	24135	
51423	32154	35241	42315	
15432	31254	53421	43215	
14532	13524	54321	34251	
41352	15324	45312	32451	
43152	51342	43512	23541	
34125	53142	34152	25341	
34215	35412	31452	52314	
43125	34512	13425	53214	
41325	43521	13245	35124	
14352	45321	31425	31524	
13452	54231	31245	13542	
31542	52431	13254	15342	
35142	25413	12354	51432	
53124	24513	21534	54132	
51324	42153	25134	45123	
15234	41253	52143	41523	
12534	14235	51243	14253	

London

London Pleaſure on five Bells.

IN this Peal called *London Pleaſure*, are Six-ſcore changes, which are all ſingle. It being a confuſed Peal to ring, I ſhall ſay nothing more of it, but expoſe it to view, as in the following changes.

12345	12543	42135	45321	51342
21345	12453	42315	43521	15342
21354	21453	42351	43251	15324
12354	24153	42531	43215	51324
12534	24513	45231	43125	53124
21534	25413	54231	41325	35124
25134	52413	54213	14325	31524
25314	52431	54123	13425	13524
23514	25431	51423	31425	13254
23154	24531	15423	31452	31254
23145	24351	———	13452	32154
23415	24315	15432	13542	32514
23451	24135	———	31542	35214
23541	21435	51432	35142	53214
25341	12435	54132	35412	53241
52341	14235	45132	34512	35241
52314	41235	41532	34152	32541
52134	41253	14532	34125	32451
51234	14253	14352	34215	32415
15234	14523	41352	34251	32145
15243	41523	43152	34521	31245
51243	45123	43512	35421	13245
52143	45213	45312	53421	———
25143	42513	54312	53412	12345
21543	42153	54321	53142	

What you please. Doubles and Singles on 5 Bells.

EVery bell leads four times, and lies behind twice, except when the extream is made behind, and twice in the seconds place, except when the extream is before; and note, when the treble is before the fourth stroke, the single is in second and third, the next time the single is behind; but at other times, the single is in third and fourths places. When any bell leaves leading, the double change is on the two first, and two last, and the extreams are made by turns, first behind, then before, and so on to the end, for there are six extreams.

12345

12345	54123	24513	13425
21354	51432	24153	31452
21534	51342	42135	31542
25143	15324	42315	35124
25413	15234	43251	35214
52431	12543	43521	53241
52341	———	34512	53421
53214	15243	34152	54312
53124	51234	31542	54132
35142	51324	31245	45123
35412	53142	13254	45213
34521	53412	13524	42531
34251	35421	15342	42351
43215	35241	———	24315
43125	32514	13542	24135
41352	32154	31524	21453
41532	23145	31254	21543
14523	23415	32145	12534
14253	24351	32415	12354
12435	24531	23451	13245
———	42513	23541	———
12453	42153	25314	12345
21435	41235	25134	
21345	41325	52143	
23154	14352	52413	
23514	14532	54231	
32541	15423	54321	
32451	———	45312	
34215	15432	45132	
34125	51423	41523	
43152	51243	41253	
43512	52134	14235	
45321	52314	14325	
45231	25341	13452	
54213	25431	———	

Reading Doubles. On five Bells.

IN this Peal are Six-ſcore changes, the treble is a Hunt; and note when treble is in thirds place hunting up, the two foremoſt bells dodge until it comes into the ſame place hunting downwards; and alwayes when the treble is going to lead, the four firſt bells makes the double change, if the third be behind; but if it be before, the double is on the two firſt and two laſt; every bell lieth twice behind, except when the treble goes to lead, if the third be before; and note, when it is 1,3,2, there is a ſingle in ſecond and thirds places, which is twice, once at the Three-ſcore end, and Six-ſcore end.

12345

12345	34251	14532	45321
21435	43215	41352	54312
24153	34125	43125	45132
42513	31452	34215	41523
24531	13425	43251	14253
42351	14352	34521	12435
24315	41532	43512	21345
42135	45123	34152	23154
41253	54213	31425	32514
14523	45231	13452	23541
15432	54321	14325	32451
51342	45312	41235	23415
53124	54132	42153	32145
35214	51423	24513	31254
53241	15243	42531	13245
35421	12534	24351	12345
53412	21354	42315	
35142	23145	24135	
31524	32415	21453	
13542	23451	12543	
15324	32541	15234	
51234	23514	51324	
52143	32154	53142	
25413	31245	35412	
52431	13254	53421	
25341	12354	35241	
52314	21534	53214	
25134	25143	35124	
21543	52413	31542	
12453	25431	13524	
14235	52341	15342	
41325	25314	51432	
43152	52134	54123	
34512	51243	45213	
43521	15423	54231	

Old Doubles. On five Bells.

THis Peal call'd *Old Doubles*, is to be rang on five bells, wherein are Six-score changes, which are all Doubles, except only when the whole Hunt leads, and then there is alwayes a single change made. It has a whole Hunt, a half Hunt, and three extream bells; every bell leads twice together all the way, and lies twice behind, except only when the whole Hunt leads, and then the bell behind lies there four times together, unless the extream is made behind, and then but twice. Every bell hunts in a perfect course, until the whole Hunt leads, and then the single is to be made, at which time the bell in seconds place lies there twice (unless the extream is made in second and thirds place) and every single change is made in third and fourths places, except the extreams

which

which are (in this Peal) made by the ſame rule, and after the ſame manner, as I ſhewed before in the Six-ſcore call'd Doubles and Singles on five bells. In making the ſingle changes in third and fourths places, it is obſerved, that the bell which lies in fourths place (the change next before the ſingle) is hunting up; and in making the ſingle change, it does dodge with the bell in thirds place, and ſo hunts up behind; and likewiſe the bell that lies in thirds place (in the change next before the ſingle) is hunting down, and in making the ſingle it does dodge with the bell in fourths place, and then hunts directly down.

In this following Peal, the treble is the whole Hunt, the ſecond the half Hunt, and an extream change is alwayes made, when the half Hunt lies before the extream bells next to the whole Hunt; every extream is made between the two fartheſt extream bells from the half Hunt, as in theſe following changes.

12345	35241	15234	25341
21435	32514	51324	23514
24153	23154	53142	32154
42513	21345	35412	31245
45231	12435	34512	13425
54321	12453	43251	13245
53412	21543	42315	31425
35142	25134	24135	34152
31524	52314	21453	43512
13254	53241	12543	45321
13524	35421	12534	54231
31254	34512	21354	52413
32145	43152	23145	25143
23415	41325	32415	21534
24351	14235	34251	12354
42531	14325	43521	12345
45213	41235	45312	
54123	42153	54132	
51432	24513	51423	
15342	25431	15243	
15432	52341	15423	
51342	53214	51243	
53124	35124	52134	
35214	31542	25314	
32541	13452	23541	
23451	13542	32451	
24315	31452	34215	
42135	34125	43125	
41253	43215	41352	
14523	42351	14532	
14253	24531	14352	
41523	25413	41532	
45132	52143	45123	
54312	51234	54213	
53421	15324	52431	

This

This Peal of *Old Doubles*, is groundᵈ:d on the Twenty-four changes Doubles and Singles on four bells, which are made in a perfect course herein; every time the whole Hunt leads, there are two changes made in the Twenty-four; the half Hunt, and three extream bells, makes the Twenty-four changes, and every single change in this Peal, is a single change in the Twenty-four.

This Peal may be rang Six-score several wayes; with one whole Hunt, and half Hunt, it is to be rang six wayes (*i.e.*) three wayes in hunting up the whole Hunt at the beginning of the Peal, and the other wayes in hunting it down; in which six wayes, the Extream Changes are to be made by the same rule, and in the same manner, as those in the Six-score Doubles and Singles on five Bells, and *Paradox* before set down; so that with the twenty Hunts, it may be rang twenty times six wayes, which makes Six-score.

In these Six-score wayes, the whole Hunt is before the Bells when every single Change is made; but it may be rang Six-score several wayes more, by making the single Changes when the whole Hunt

Hunt lies behind them, which being never practiſed, I will ſay no more of it.

For the convenience and benefit of the Practitioner, I have ſet down certain rules, ſhewing how to begin each Peal of *Old Doubles* (with any Hunt) by the former courſe (*i. e.*) in making the ſingle Changes, when the whole Hunt lies before the Bells, theſe Rules ſerving only for moving the whole Hunt at the beginning of each Peal, for it may be hunted either up or down.

In hunting either the treble, third, or fifth Bells up, the firſt change is made between the four foremoſt Bells, thus.—12345:21435.

—*The treble down, the firſt change is ſingle in third and fourths places, unleſs the half Hunt lies ſo, as that the Extream is to be made.*

—*The third or fifth down, the firſt change is between the four hindmoſt Bells, thus.*—12345:13254.

—*The ſecond or fourth up, the firſt change is between the four hindmoſt Bells.*

—*The ſecond or fourth down, the firſt change between the four foremoſt Bells.*

In

In ringing any of these Peals, where the first change is made between the four hindmost Bells, it must be made at the Back-stroke, otherwise the Bells will cut Compass all the way; every double change is made either between the four foremost, or four hindmost Bells.

New Doubles. On five Bells.

IN this Peal of *New Doubles*, there are Six-score Changes, which are all double, except only when the whole Hunt leads, and then there is alwayes a single Change made; it has a whole Hunt, a half Hunt, and three Extream Bells. The whole Hunt has a perfect course in hunting up and down, and lies twice before, and twice behind. When the whole Hunt leaves the thirds place hunting up, then each Bell that comes into that place, lies there twice, and then moves up behind; and the Bells in treble and seconds places, does continue dodging from the time that the whole Hunt hunts up out of thirds place, until it comes into that place again hunting down; and that Bell which comes into thirds

thirds place (when the whole Hunt leaves it hunting down, lies there twice, and then moves up behind) and the next Bell that comes into that place, lies there twice also, and then moves down before the Bells. But note, that Bell which lies in the thirds place (in the Change next before the Extream) continues there, until the whole Hunt hunts up into that place, and then it moves down; when the whole Hunt leads the Bell in seconds place, lies there twice together, and then moves down before the Bells; and every Bell that comes behind, lies there twice, except only in the Change next before, and that next after the whole Hunt leads; every single Change is made in third and fourths places, except the Extreams, which are also single Changes, and made between the two hindmost Bells, when the half Hunt lies before the Extream Bells next to the whole Hunt.

These directions are only for Ringing this Peal next following; but it may be Rang many other wayes, by making the Extream Changes in other places, of which I shall speak more anon.

12345

12345	24351	15324	34512
21354	42315	15234	43521
23145	24135	51243	34251
32415	21453	52134	43215
23451	12435	25314	34125
32541	——	52341	31452
23514	12453	25431	13425
32154	21435	52413	13245
31245	24153	25143	31254
13254	42513	21534	32145
13524	24531	12543	23415
31542	42351	——	32451
35124	24315	12534	23541
53214	42135	21543	32514
35241	41253	25134	23154
53421	14235	52314	21345
35412	14325	25341	12354
53142	41352	52431	——
51324	43125	25413	12345
15342	34215	52143	
15432	43251	51234	
51423	34521	15243	
54132	43512	15423	
45312	34152	51432	
54321	31425	54123	
45231	13452	45213	
54213	13542	54231	
45123	31524	45321	
41532	35142	54312	
14523	53412	45132	
14253	35421	41523	
41235	53241	14532	
42153	35214	14352	
24513	53124	41325	
42531	51342	43152	

This

This Peal may be Rang Six-score several wayes. With one whole Hunt, and half Hunt, it may be Rang six wayes; in three of which, the whole Hunt is to be hunted up, and in the other three wayes it is to be hunted down; which six wayes are to be Rang, by making the Extream changes by the same rules, and in the same manner, as in Doubles and Singles on five Bells, *Old Doubles*, and *Paradox*, before set down; so that with the twenty Hunts, it may be Rang twenty times six wayes, which makes Six-score.

This Peal is grounded on the Twenty-four Changes, Doubles and Singles on four Bells, the half Hunt and three Extream Bells makes the Twenty-four Changes in perfect course; and in the same manner, as I shewed you in *Paradox*, and *Old Doubles*.

These following rules shews how to begin any Peal of *New Doubles*.

In hunting either the treble or fourth up, the first change must be double between the two first, and two last Bells, thus.—12345:21354.

In hunting the treble down, the first change is single in third and fourths places,

places, unleſs the extream is to be made.

—The fourth down, the firſt change is between the four firſt Bells.

Second up, firſt change double between the four hindmoſt Bells.

Second down, the firſt change is double between the two firſt, and two laſt Bells.

Third up, firſt change double between the four foremoſt Bells.

Third down, firſt change double between the four hindmoſt Bells.

Fifth up, double between the four firſt Bells.

Fifth down, firſt change double, two firſt and two laſt Bells.

Grandſire on five Bells.

Grandſire is the beſt and moſt ingenious Peal that ever was compoſed, to be rang on five bells, it having no dependance on the courſe of any other Peal. There are Sixſcore changes in it, in pricking of which, there is the greateſt variety of any other Peal whatſoever; for it may be prick't or rang ſome thouſands of wayes. The common way of ringing it, is to make the Bobs and ſingle changes when the whole Hunt leads, which courſe and

and method I will first set down, and afterward say something of the other wayes in ringing it. It has a whole hunt and half hunt, the changes are all double except two, which are single. The whole hunt has a perfect course in hunting up and down, and lies twice together before, and twice behind all the way; every other bell has the same course as the whole hunt, in moving and hunting up and down; and each bell lead twice together all the way, and lie twice together behind, except only at the Bobs. Every Bob-change is made between the two first and two last bells, the bell in thirds place lies still when every Bob-change is made, and then moves down; and every other double change is made between the four bells that stand together (*viz.*) either the four first, or four last bells. There are two sorts of Bobs, one of which is call'd a single Bob, and the other a double. The Rule for making the single Bob is this — When the whole hunt leads, and the half hunt lies in thirds place, the next is a Bob-change; in making of which, the whole hunt moves out of the trebles place up into the seconds place hunting up, and the bell which lies behind in the change next before the Bob, makes a dodge with the bell in fourths place, and then lies twice behind; and that bell which did dodge with the bell in tenors place, moves directly down; this is a single Bob, that is, one Bob-change. The Rule for making the double Bob is this — When the whole hunt lies in the seconds place hunting down, and the half hunt behind, then there is a double Bob, that is, two

Bob-

Bob-changes, one of which is made the next change wherein the whole Hunt moves out of the ſeconds place down before the bells, and the other Bob is made the next change but one to it, in which the whole Hunt moves from before the bells up into the ſeconds place; the bell which lies in the thirds place when every Bob-change is made, lies there twice, and then moves down. And at every double Bob, the two hindmoſt bells continue dodging until the whole Hunt moves up into the fourths place, and parts them. Every time the whole Hunt comes before the bells, there is either a ſingle Bob, or double Bob made, which comes by turns, one ſingle, and the next double throughout the Peal.

The greateſt variety of this Peal, conſiſts in making the ſingle changes. In this way of Ringing it (with any whole Hunt and half Hunt) the firſt ſingle change may be made either at the firſt, ſecond, third, fourth, fifth, or ſixth Bobs, at the ſingle or double Bobs at pleaſure; obſerving for a conſtant Rule, that the half Hunt is alwayes one of the two bells which makes every ſingle change; for the ſingle changes are ſo contrived, that (in making them) the whole Hunt and half Hunt are to continue their conſtant courſe as at other times. At the ſingle Bob, the ſingle change is made in ſecond and thirds places; and at the double Bob, 'tis made in fourth and fifths places, the other three bells lying ſtill in their places, whil'ſt each ſingle change is made; the next change to each ſingle, is a Bob-change; every ſingle change is made when the whole hunt

lies before the bells; there being alwayes sixty changes, from the first single change to the second; if the first single change is made at a single bob, then the second single change must be made at the third single bob from it; or if the first single change is made at a double bob, the second single change must be made at the third double bob from that where the first was made.

This Peal may be rang without making any single change therein, which is done by making a double change to supply the place of it. There are two of these double changes in each Peal; the first of them may be made at any bob within sixty changes from the beginning of the Peal, and the second is to be made just sixty changes from the first. At a double bob, it may be made at either of the two bob-changes; at the first of them, 'tis made by moving the whole Hunt down, and the bell in thirds place up over two bells at once into the tenors place, thus:——— 41325:14253.

In making it at the second bob change of the double bob, 'tis the same as at the first, only in that the whole Hunt moved down to lead; but in this it must move up from before the bells into the seconds place, as in this change———————— 12435:21354.

The changes next following these, are the same as at other times. At the single bob, 'tis to be made when the whole Hunt lies in the seconds place hunting down; in which place it may be made two wayes, in one of which the bell in thirds place is to be moved up behind, in the same manner as I shewed you at the

the double bob: The other way, is to move the bell in tenors place down into the thirds place, thus: ——————— 51423:15342.

Now the reason wherefore at this place it may be made two wayes, and at each of the double bob changes but one way, is this; At the double bob, the half Hunt lies behind, which cannot be moved into thirds place, for that would put it out of its course; but in the single bob, the half Hunt lying before the bells, and the whole Hunt in seconds place, so that neither of those bells are concerned therein; therefore it may be made either by moving the bell in thirds place up behind, or else by moving the hindmost bell down into thirds place, both which are to one effect, though different changes; for these changes are so continued, that (in making them) the whole Hunt and half Hunt are to continue their constant course, as at other times.

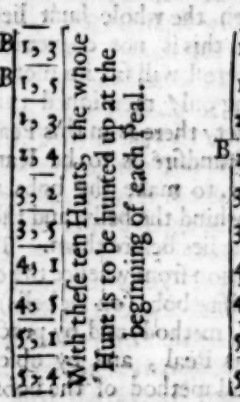
I have here set down this Peal of Grandsire, making the treble the whole Hunt, and the tenor the half Hunt, and the first single change is made the sixth bob; that is, the third double bob, which is sixty changes from the beginning of the Peal; you may know the single change, by the line drawn between the figures at the single change, that next after the line is the single: Grandsire is most commonly rang, as it is here prickt; but it may be rang any other way, according to my directions before.

12345	31452	42135	32145	42315	32451
21354	34125	24315	23415	43251	23541
23145	43215	23451	24351	34521	25314
32415	42351	32541	42531	35412	52134
34251	24531	35214	45213	53142	51243
43521	25413	53124	54123	51324	15423
45312	52143	51342	51432	15234	14532
54131	51234	15432	15342	12543	41523
51423	15324	14523	13524	21534	45132
15243	13542	41532	31542	25143	54312
12534	31524	45123	35124	52413	53421
21543	35142	54213	53214	54231	35241
25134	53412	52431	52341	45321	32514
52314	54321	25341	25431	43512	23154
53241	45231	23514	24513	34152	21345
35423	42513	32154	42153	31425	12354
34512	24153	31245	41235	13452	——
43152	21435	13254	14253	14325	12345
41325	12453	——	12435	41352	
14352	14235	13245	21453	43125	
13425	41253	31254	24135	34215	

Grandsire may be rang another way (*viz.*) in making the bobs when the whole Hunt is before the bells (as in the former way) and to make the single changes when it lies behind (*viz.*) the first single change may be made at any time when the whole Hunt comes behind, provided it be made within sixty changes from the beginning of the Peals if it is made the next time the whole Hunt comes behind after a single bob, it is in treble and seconds places; after a double bob, it is made in third and fourths places, the whole Hunt lying

lying behind when each single change is made, and the second single change must be made just sixty changes from the first.

In all the several Peals of Grandsire by the course aforesaid, the first changes in each Peal must be made by these following Rules.



These are the twenty Hunts on five bells, which are set down in Page 26. The two Figures which stand together, do represent the whole Hunt and half Hunt; for instance, the uppermost figures are 1, 3; the 1 is the whole Hunt, and the 3 is the half Hunt, and so of the rest. Where the letter B stands by the Hunt, the first change that Hunt makes is a Bob: But with all the other Hunts, the first change is either between the four first, or four last bells; yet the first change in many of them may be made single, as in 1, 2: 1, 3: 1, 4: 1, 5: 2, 1: 2, 3: 3, 1: 3, 5: 4, 1: 4, 3: 4, 5: 5, 1: 5, 4:

In hunting the treble down, the first change is made between the four hindmost bells; and in hunting the fifth bell up, the first change is made between the four foremost bells.

There is another way to Ring this Peal of Grandsire, which is, to make the bobs and single changes when the whole hunt lies behind the bells; but this is not convenient to be practised, therefore I will say no more of it in this place, having only mentioned this, to shew the great variety there is in this Peal.

This Peal of Grandsire is to be Rang by another course, *viz.* to make the bobs when the whole hunt is behind the bells, and the single changes, when it lies before them. This is the absolute foundation from whence the excellent Peal of Grandsire bob (on six bells) had its beginning and method, and by practising to prick down this Peal, and by observing the true course and method of the bobs and single changes herein, you may with the greater ease understand the true course of the bobs and single changes in Grandsire bob on six bells, for the half hunt, the quarter hunt, and the three extream bells (in Grandsire bob on six bells) do make these sixscore changes; every time the whole hunt leads in Grandsire bob, there are two changes made in this Peal of Grandsire on five bells: And so consequently, the single changes in Grandsire bob are made by the same rule and method as they are in this Peal. The Rule for making the bobs in this Peal, is this (*viz.*) when the whole hunt lies in the fourths place hunting up, and the half hunt leads, the next is a double bob: And

and

when the whole hunt lies in the tenors place, and the half hunt in thirds place, then the next change is a single bob, the bobs are made between the two first and two last bells, that in thirds place lies still in the bob change, and then moves up. The single changes are made when the whole hunt leads; the first single change (in Ringing it with any whole hunt and half hunt) may be made at any time when the whole hunt leads, within sixty changes from the beginning of the Peal, accounting the bells as they stand round at the beginning for one of the sixty changes. The single change that is made the next time the whole hunt leads after a single bob, is made in fourth and fifths places; and that which is made next after a double bob, is made in second and thirds places, the half hunt is alwayes one of the two bells which makes every single change. If the first single change is made after a single bob, then the second single change must be made when the whole hunt leads next after the third single bob from that after which the first single was made; and the same is observed, in making them after a double bob: there being alwayes sixty changes from the first to the second single change in each Peal. This Peal I have here set down, in which I make the treble the whole hunt, the fifth the half hunt, and the first single change is made when the whole hunt comes to lead next after the first single bob: You may know the single change, by the line drawn between the figures; the change next below the line, is the single, as in the following Peal,

12345	———	12354	41523	41532	25134
13254	13452	21534	45132	45123	52314
31524	31542	25143	54312	54213	25341
35142	35124	52413	45321	45231	52431
53412	53214	25431	54231	54321	25413
35421	35241	52341	45213	45312	52143
53241	53421	25314	54123	54132	51234
35214	35412	52134	51432	51423	15324
53124	53142	51243	15342	15243	13542
51342	51324	15423	13524	12534	31452
15432	15234	14532	31254	21354	34125
14523	12543	41352	32145	23145	43215
41253	21453	43125	23415	32415	42351
42135	24135	34215	24351	34251	24531
24315	42315	32451	42531	43521	42513
23451	43251	23541	24513	34512	24153
32541	34521	32514	42153	43152	21435
23514	43512	23154	41235	41325	12345
32154	34152	21345	14325	14235	
31245	31425	12435	———	12453	
13425	13245	14253	14352	21543	

This Peal may be Rang without making any single change therein, there are two double changes which may be made to supply the places of the two single changes; the first of these double changes in any Peal may be made any time when the whole hunt lies in fourths place hunting up, provided you make it within sixty changes from the beginning of the Peal. At a double bob, it may be made at either of the two bob-changes, by moving the bell which lies in thirds place down under two bells at once into the trebles place: Now suppose it were

were to be made the first time the whole hunt lies in the fourths place hunting up in the Peal next before, which is at a double bob, the bells lie thus, 53412; now the treble being the whole hunt must move up behind, and the fourth bell being in thirds place, must move down under two bells at once into the trebles place, thus, 45321; or else it may be made at the next bob-change of the double bob, 53241; here the treble must be moved down into fourths place, and the second bell into trebles place, thus, 25314. It may also be made the change next before the single bob, in which change it may be made two wayes; *viz.* either by moving the bell in thirds place down into trebles place, as in the changes next before, or else by moving the bell in trebles place up into thirds place; for instance, two changes before the first single bob (as in the Peal before set down) the bells lie thus, 24315; now the change may be made, either by moving the third bell into the trebles place, thus, 32451; or else the bell that leads up into thirds place, thus, 43251; in both which wayes, the whole hunt is to be moved up behind.

There are only two of these double changes to be made in each Peal, if the first is made at a double bob, then the second must be made at the third double bob from it; or if the first of them is made at a single bob, then the second must be made at the third single bob from that where the first was made, there being alwayes just sixty changes from the first of these double changes to the second in each Peal.

These double changes are the same which in Grandsire

Grandſire bob on ſix bells, are called true changes; thoſe true changes in Grandſire bob being made by the ſame rule, and in the ſame manner as theſe are.

In all the Peals of Grandſire, wherein the bobs are made when the whole hunt is behind (according to the Rules next before ſet down) the firſt changes in each Peal muſt be made by theſe Rules following.

	1, 2
	1, 5
	2, 1
	2, 5
	3, 1
	3, 4
	4, 2
	4, 3
B	5, 1
B	5, 3

With theſe ten Hunts, the firſt change in each Peal is made by hunting down the whole Hunt.

	1, 3
	1, 4
	2, 3
	2, 4
	3, 2
	3, 5
B	4, 1
	4, 5
	5, 4
	5, 2

With theſe ten Hunts, the firſt change in each Peal is made by hunting the whole Hunt up.

Where the letter B ſtands next to any hunt, the firſt change which that hunt makes, is a bob: But with all the other hunts, the firſt change in each Peal is made double, either between the four firſt, or four laſt bells; yet in many of them, the firſt change may be made ſingle, as in 1, 2 : 1, 5 : 2, 1 : 2, 3 : 2, 5 : 3, 5 : 4, 3 : 4, 5 : 5, 2 : 5, 3 :

Before I conclude my directions to this excellent Peal of Grandſire, I will ſet down one general Rule for making the ſingle changes in any

any Peal (at places differing from any of the former Rules) *viz.* whereſoever the whole hunt and half hunt meets together to make a change (which conſtantly happens every time the whole hunt hunts up, and every time it hunts down in every Peal) the other three bells may lie ſtill in their places, whil'ſt the whole hunt and half hunt makes the change; which being made, the whole hunt, the half hunt, and the other bells are immediately to proceed in their courſe; which ſingle change is as effectual, as thoſe which are made by the Rules aforeſaid. Obſerving to make the firſt ſingle change in any Peal, within ſixty changes from the beginning; and the ſecond ſingle change muſt be made (juſt ſixty changes from the firſt) between the whole hunt, and half hunt, which two bells will in courſe lie in the ſame places where the firſt ſingle change was made.

The Seven-ſcore and four on ſix Bells.

THis Peal containing Seven-ſcore and four changes, is to be Rang on ſix bells, in which, the treble and tenor are both whole hunts, and the ſecond is the half hunt; the whole hunts do both hunt at one and the ſame time in a direct courſe, one up, and the other down; and alwayes when one of them lies before the bells, the other lies behind them; and when that hunt which lies before the bells, leaves the trebles place hunting up, the other hunt

hunt lying behind, leaves the tenors place hunting down; each hunt lies only twice together before the bells, and twice behind throughout the Peal.

The second bell is the half hunt in this following Peal, for the second, third, fourth and fifth bells make the twenty four changes herein; every time the whole hunts come before and behind the bells, there is one change made in the Twenty-four (which is always once in six changes) the second bell being the hunt on the Twenty-four; so that every time it comes before or behind the extream bells, there is an extream change to be made, which in the following Peal is made between the two farthest extream bells from the second. I have only set down part of this Peal, which is sufficient to shew the course and method thereof.

123456	312465	346152	643521
213465	132456	341652	643251
231645	134256	314562	463215
236145	314265	134526	436125
263415	341625	——	431625
623451	346125	143526	413265
632451	364215	413562	143256
362415	634251	431652	142356
326145	634521	436152	412365
321645	645312	463512	421635

At the extream change next before, I have drawn a line between the figures, that next below the line is the extream: The aforesaid Peal may be Rang with any other whole hunt, or half hunt; and also the Twenty-four changes doubles and singles, may be made in the room of the plain Twenty-four in the aforesaid Peal.

Trebles

Trebles and Doubles on six Bells.

THere are many Peals of Trebles and Doubles to be Rang on six bells, as, Six-score changes, Seven-score and four, Twelve-score, and Seven-hundred and twenty. In each of which Peals, the changes that are made from the time that the whole hunt leaves the trebles place hunting up, until it comes down into that place again, are all made in one and the same manner; so that the only difference in these Peals, consists in making the changes when the whole hunt leads. These Peals are called Trebles and Doubles; because one is a treble change (that is, 3 changes made together, in which all the six bells do change their places, thus, 123456:214365:) and the next is a double change between the 4 bells, in the midst, thus, 241635: And in this course the changes are alwayes made from the time that the whole hunt leaves the trebles place hunting up, until it comes down into the trebles place again; and in Ringing this Peal, 'tis observed, that every bell does hunt in a perfect and direct course, and lie twice together before, and twice behind, until the whole hunt leads.

The manner of Ringing the Seven-score and four, is this; the treble and tenor are both whole hunts, and the second is the half hunt; the first change is a treble change, and the next a double change, as I shewed you before;

fore; in which course they are made, until the treble leads again, and the tenor lie behind; at which time there's a single change to be made in third and fourths places: But when the half hunt lies next to the treble, then the next single change must be made in fourths and fifths places, as in this following Peal, where I have only set down part of it for an example.

123456	132546	514362	421653	326154	
214365	135246	153426	412563	231645	
241635	312564	154326	145236	213465	
426153	321654	513462	142536	124356	
462513	236145	531642	415263		
645231	263415	356124	451623	124536	
654321	624351	365214	546132	215463	
563412	642531	632541	564312	251643	
536142	465213	623451	653421	526134	
351624	456123	264315	635241	562314	
315264	541632	246135	362514	653241	

This Peal is grounded on the Twenty-four changes doubles and singles, the second, third, fourth and fifth makes the Twenty-four changes; the second bell is the hunt in the Twenty-four, therefore the extream in the Peal next before, is made between the two farthest extream bells from it when it lies before them: At the extream changes there's a line drawn between the figures, but the extreams may be made every time the second lies behind the extream bells; or else, every time it lies before and behind them, in the same manner, as I told you before in my directions to the Twenty-four Doubles and Singles: And this Peal may

may be alſo Rang with any other whole hunts, or half hunts.

In the Six-ſcore Trebles and Doubles, the changes are the ſame as in the Peal next before, until the whole hunt leads, at which time (in this Peal) there is a double change to be made between the four hindmoſt bells; but when the whole hunt leads, and the half hunt lies next to it, then there is a ſingle change to be made, either between the two neareſt bells to the half hunt, or elſe between the two fartheſt bells from it; there are but two ſingle changes in the Peal, and the ſecond ſingle change muſt be made between thoſe two bells which made the firſt. In this following, the treble is the whole hunt, and the ſecond the half hunt, and the firſt ſingle change is made when the bells do lie 124365: which is ſixty changes from the beginning of the Peal; after the whole hunt has at firſt hunted up and down again: I have ſet down only thoſe changes which are made every time the whole hunt leads.

123456	315264	142635	165342
214365	132546	———	156432
241635	135264	124365	154623
426153	———	———	———
462513	153624	123465	145263
645231	156342	———	142536
654321	———	132645	———
563412	165432	136254	124356
536142	164523	———	———
351624	146253	163524	123456

The

The course of the Twelve-score, and the Seven-hundred and twenty, are both one and the same; for the Twelve-score changes, are only part of the Seven-hundred and twenty. There's a whole hunt, a half hunt, a quarter hunt, and three extream bells in the Seven-hundred and twenty; the changes are all treble and double (in the same course, as in the Six-score next before set down) until the whole hunt leads, and the half hunt lies next to it, at which time there's a single change to be made in fourth and fifths places: But when the whole hunt leads, and the half hunt lies next to it, and the quarter hunt lies next to the half hunt, then there's an extream to be made, which is a single change, and made between the two farthest extream bells from the quarter hunt; and by observing this course, you may prick down, or Ring the Seven-hundred and twenty: But if you would only Ring Twelve-score changes (and then end there, by bringing the bells round) you must make no extream change at all; for in making every single change in fourth and fifths places, the bells will come round in course at the end of Twelve-score changes, if you make no extream change to carry the Peal forward. In the following changes, the treble is the whole hunt, the 2 is the half hunt, the 3 the quarter hunt, and the 4, 5, and 6, are the extream bells. It being not much material to set down this Peal at large, therefore after the treble (which is the whole hunt) has hunted twice up and down, I have put down only the two changes which are made every time the treble leads to the end of the Twelve-score, as follows. 123456

123456	654123	135462	153246
214365	561432	——	152364
241635	516342	153642	——
426153	153624	156324	125634
462513	156342	——	single
645231	——	165234	125364
654321	165432	162543	——
563412	164523	——	152634
536142	——	126453	156243
351624	146253	single	——
315264	142635	126543	165423
132546	——	——	164532
135264	124365	162453	——
312546	single	164235	146352
321456	124635	——	143625
234165	——	146325	——
243615	142365	143652	134265
426351	143256	——	132456
462531	——	134562	——
645213	134526	135426	123546

The laſt change is 123546: which is at the end of Twelve-ſcore changes; and here you ſee, that the whole hunt, the half hunt, and quarter hunt, do lie next to each other before the extream bells; therefore the bells may either be brought round, by making the ſingle change in the ſame place, as thoſe next before, are made thus, 123456: or elſe, if you would proceed forward to the end of the Seven-hundred and twenty, then the next muſt be an extream change between the fourth and ſixth, which are the 2 hindmoſt bells, thus, 123564: and by obſerving to make an extream change

behind every time the 1, 2, 3, lie together before the bells, the bells will come round in course at the end of the Seven-hundred and twenty; at the end of every Three score changes, there's a single change throughout the Peal, and an extream change at the end of every Twelve-score. This Peal (by the Rules aforesaid) may be Rang with any whole hunt, half hunt, and quarter hunt.

In this Peal is contained the Six-score changes of Old Doubles on five bells, and also the Twenty-four changes Doubles and Singles on four bells; the half hunt, the quarter hunt, and three extream bells, makes the Six-score changes of Old Doubles in a perfect course; and the quarter hunt, and three extream bells, do make the Twenty-four changes Doubles and Singles. Every time the whole hunt leads, there are made two changes of the Six-score; and every time the whole hunt leads, and the half hunt lies next to it, there are two changes made in the Twenty-four.

Grandsire Bob. *On six Bells.*

IN this Peal of Grandsire Bob, there are Seven-hundred and twenty changes, in Ringing of which, there is the same course, as in Trebles and Doubles (before set down) until the bob-changes come to be made; this Peal may more properly be called Trebles and Doubles than the former, because all the changes throughout the Seven-hundred and twenty,

are

are treble and double, except only the two single changes: But in Ringing an Eighteen-score (which is half the Seven-hundred and twenty, and a complete Peal of it self) the changes are all treble and double without any single change therein; for you must know, that in any Peal of Grandsire bob, the bells will come round in course at the end of Eighteen-score changes, if you make no single change to carry it on farther to the end of the Seven-hundred and twenty.

This Peal has a whole hunt, a half hunt, a quarter hunt, and three extream bells; every bell hunts in a direct course, and lies twice together before, and twice behind, until the whole hunt leads, and then the four hindmost bells do dodge, that is, they make a double change; in which 'tis alwayes observed, that the two bells which lie in third and fifths places (in the change next before the dodge) are hunting down, and in making this double change, each of those bells do dodge with the bell next above it, that is, they move up over one bell, and then each of them moves directly down; and the two bells that lie in fourth and tenors places in the change next before every dodge, are hunting up, and in making the dodge change, each of those bells do move down under one bell, and then they move up again in their course, as before; the dodge changes in all Peals of Trebles and Doubles, are made in the same manner as these.

There are two sorts of bobs in this Peal, *viz.* a single, and a double bob; the Rule for making the single bob, is this, when the whole

hunt leads, and the half hunt lies in tenors place, and the quarter hunt in fourths place, the next change is a bob; and when the whole hunt leads, and the half hunt lies in fifths place, and the quarter hunt in seconds place, then there is a double bob, that is, two bob-changes; one of which is made the next change, and the other is made the next time the whole hunt leads after. The bobs are all double changes, and made in one and the same manner (*i.e.*) the leading bell, and that in fourths place, do both lie still, whil'st the two bells in second and thirds places, and those in fifth and tenors places make the bob-change; and as soon as 'tis made, the bell in fourths place moves directly down. The half hunt is alwayes one of the two hindmost bells which makes every bob-change.

In Ringing this Peal, there is a Rule observed, whereby the person that does Ring the quarter hunt, may give notice of the bobs before they come to be made, without which it were impossible to Ring it; the Rule is this: In the dodge which is made between the four hindmost bells every time the whole hunt leads, if the half hunt and quarter hunt do dodge in fifth and tenors place, then the next time the whole hunt leads, there's a single bob; if they dodge in fourth and thirds places, then there's a double bob, that is, two bob-changes, one of which is made the next time the whole hunt leads after the dodge, and the other is made the next time the whole hunt leads after the former is made: He that does Ring the quarter hunt, may give notice of every

ry bob-change, by saying (Bob) when the whole hunt is going to lead, which is a change next before the bob is to be made.

There are certain Rules very convenient to be known by all that practise to Ring this Peal; (*viz.*) he that does Ring the whole hunt, must observe that the bell which he first follows when he leaves the trebles place hunting up, he must follow the same bell the next time he lies behind; and the second bell which he follows in hunting up, he must also follow the same bell when he next leaves the tenors place hunting down; and likewise, the third bell which he follows in hunting up, he must also follow the same bell when he leaves the fifths place hunting down: For instance, in the first change of the following Peal, the bells stand thus, 2 1 4 3 5 6: here the treble (being the whole hunt) does first follow the second, therefore when the treble has hunted up, and lies behind it, follows the second again, as in this change, 6 5 4 2 1 3: And again, the second change of the following Peal, is 2 4 1 6 3 5: here the fourth is the second bell, which the treble follows in hunting up, therefore he follows that bell again the next time he leaves the tenors place hunting down, as in this change, 5 6 3 4 1 2: which course is observed throughout the Peal. And in Ringing any other bell (beside the whole Hunt) 'tis observed, that the next time you lie before the bells after a bob, that bell which you first follow in hunting up, you must also follow the same bell when you lie behind; and the same bell you must first follow every time you hunt up, and every time you lie be-

hind, until the next bob comes to be made; but if the whole hunt is the second bell which you follow in hunting up, then you must follow the whole Hunt when you lie behind; and the next time you lead, and lie behind, you must follow the former bell as before, until the bobs come to be made; and after the bobs, the course is the same (though you do not follow the same bell) as before.

These Rules and Directions before set down, are to be observed in Ringing any Peal of Grandsire bob with any whole Hunt, half Hunt, and quarter Hunt: An Example I have here set down, wherein the treble is the whole Hunt, the second the half Hunt, and the fourth the quarter Hunt, as in these following changes.

123456	426351	614523	651423
214365	462531	165432	564132
241635	645213	———	546312
426153	654123	156423	453621
462513	561432	514632	435261
645231	516342	541362	342516
654321	153624	453126	324156
563412	156342	435216	231465
536142	513624	342561	213645
351624	531264	324651	126354
315264	352146	236415	123645
132546	325416	263145	216354
135264	234561	621354	261534
312546	243651	612534	625143
321456	426315	165243	652413
234165	462135	162534	564231
243615	641253	615243	546321

453612

453612	653214	254136	316245
435162	562341	245316	361425
341526	526431	423561	634152
314256	254613	432651	643512
132465	245163	346215	465321
134256	121536	364125	456231
312465	412356	631452	542613
321645	143265	613542	524163
236154	142356	165324	251436
263514	413265	163542	215346
625341	431625	615324	123564
652431	346152	651234	125346
564213	364512	562143	213564
546123	635421	526413	231654
451632	653241	254631	326145
415362	562314	245361	362415
143526	526134	423516	634251
——	251643	432156	643521
134562	215463	341265	465312
315426	124536	314625	456132
351246	125463	136452	541623
532164	214536	——	514263
523614	241356	163425	152436
256341	423165	614352	154263
265431	432615	641532	512436
624513	346251	465123	521346
642153	364521	456213	253164
461235	635412	542631	235614
416325	653142	524361	326541
143652	561324	253416	362451
——	516234	235146	634215
134625	152643	321564	643125
316452	156234	312654	461352
361542	512643	136245	416532
635124	521463	132654	145623

———	543261	153246	235641
154632	534621	152364	253461
516423	356412	513246	524316
561243	365142	531426	542136
652134	631524	354162	451263
625314	613254	345612	415623
263541	162345	436521	146532
236451	163254	463251	———
324615	612345	642315	164523
342165	621435	624135	615432
431256	264153	261453	651342
413526	246513	216543	563124
145362	425631	125634	536214
———	452361	126543	352641
154326	543216	215634	325461
513462	534126	251364	234516
531642	351462	523146	243156
356124	315642	532416	421365
365214	136524	354261	412635
632541	135642	345621	146253
623451	316524	436512	142635
264315	361254	463152	416253
246135	632145	641325	461523
421653	623415	614235	645132
412563	264351	162453	654312
145236	246531	164235	563421
142563	425613	612453	536241
415236	452163	621543	352614
451326	541236	265134	325164
543162	514326	256314	231546
534612	153462	523641	213456
356421	———	532461	124365
365241	135426	354216	
632514	314562	345126	
623154	341652	431562	
261345	436125	413652	
216435	463215	146325	
124653	642351	———	
126435	624531	164352	
214653	265413	613425	
241563	256143	631245	
425136	521634	362154	
452316	512364	236514	

Here

Here are just Eighteen-score changes already made; and the bells may either be brought round in their places, by making a dodg-change behind (according to the common course, thus, 124365 } but to have proceeded forward in 123456 } the 720, the last should have been a single change in third and fourth's places, thus, 124365 } the single change being made, all the 123465 } following changes to the end of the 720 are to be made, by the same rule and course as those before set down, the last change of the 720 being also a single change, and to be made in the same place, and between those two bells which made the former single, thus, 124356 } which single change brings the bells 123456 } round in their right places at the end of the 720.

This Peal of Grandsire bob may be Rang with any whole Hunt, half Hunt, and quarter Hunt; but there being some difficulty in beginning many of the Peals, I have therefore set down Directions for beginning each Peal, as follows.

1,2,3,4
1,2,1,5
1,3,2,
1,3,2,6
1,4,2,6
1,5,2,3
1,5,2,4
1,6,2,3

} In Ringing Grandsire bob with any of these eight Hunts, the first changes in each Peal are to be made in the same manner, as those in the Peal before set down, until the first bob in each Peal comes to be made.

1.2.3
1.2.6
1.3.5
1.4.2
1.4.5

With these five Hunts, the first change in each Peal is a dodge between the four hindmost bells: thus, 123456
124365

Each three figures that stand together next before, do represent a whole Hunt, a half Hunt, and quarter Hunt; for instance, the uppermost figures in the first Column, are 1.2.4. there the treble is the whole Hunt, the second the half Hunt, and the fourth the quarter Hunt, and so of the rest.

In making the treble the whole Hunt, the fifth the half Hunt, and the sixth the quarter Hunt; the first change is a dodge between the four hindmost bells, in which the half and quarter Hunt do dodge together in fifth and tenors places, therefore the next time the whole hunt comes before the bells, there's a single bob.

In ringing treble, tenor, and fifth, the whole Hunt moves up the first change, thus, 214365, and so on in the common course until it comes next before the bells, at which time there's a single bob.

In ringing treble, fourth, and third, the whole Hunt moves up the first change, thus, 214365, and so forward in the common course, until it leads again; at which time there's a bob-change to be made, and another the next time the whole Hunt leads after that, it being a double bob.

In ringing treble, third, and fourth, the first

is

is a dodge-change between the four hindmoſt bells, in which the half Hunt and quarter Hunt do dodge together in third and fourths places, therefore a double bob is next to be made, one of which bob-changes is the next time the whole Hunt leads, and the other the next following. In ringing treble, fifth, and ſecond, the firſt is a bob-change; and the next time the whole Hunt leads, there's another bob-change, it being a double bob.

In Ringing treble, ſixth, and ſecond, and treble, ſixth, and fourth, the firſt change in each of theſe two Peals is a bob.

2.4.6
5.3.4
6.1.2
5.3.1
} With theſe four Hunts, the firſt change is treble, and the next double, thus, 214365, and ſo on, till the whole Hunt leads.

3.5.2
4.6.2
6.1.1
2.3.5
6.3.5
} With theſe five Hunts, the firſt change muſt be made between the four bells in the midſt, thus, 132546.

In Ringing tenor, treble, and ſecond, there's a ſingle bob the firſt time the whole Hunt comes before the bells.

In all Peals of Grandſire bob, where the firſt change is either a bob, or a dodge between the four hindmoſt bells, or elſe a double change between the four bells in the midſt, it muſt be made at the back-ſtroke of the bells, otherwiſe the Peal would cut compaſs all the way, that is, every bell would come to lead at the back-ſtroke.

In the Eighteen-ſcore changes before ſet down, there's a line drawn between the figures

at

at every bob, the changes next below each line is a bob-change.

In the Seven-hundred and twenty changes of Grandsire bob, there are two single changes to be made. The first single change in any Peal is most commonly made as near the end of Eighteen-score changes (from the beginning) as may be, and 'tis the best way, and most convenient: For instance, sometimes it happens that one or more of those persons who do Ring this Peal, may be weary before they have Rang Eighteen-score changes, therefore upon notice given, the single change may be forborn, and then the bells will in course come round at the end of Eighteen-score changes, making a complete Peal; but after the first single change is made, the bells cannot be brought round in course, until the Seven-hundred and twenty are all made.

There is great variety in making the single changes in each Peal, which may be made at divers places (*viz.*)

The first single change in any Peal may be made the second time the whole Hunt leads after the last bob-change of the first or second double bobs, at which places the whole Hunt, half Hunt, and quarter Hunt, do alwayes lie together before the bells, and the single change is to be made in third and fourths places.

The first single change in any Peal may also be made the second time the whole Hunt leads after the first or second single bobs, at which place the whole Hunt and half Hunt do alwayes lie together before the bells; and the quarter Hunt lies behind, therefore it must

must be made between the two hindmost bells.

Or if the first bob in any Peal is a double bob, then the first single change may be made the second time the whole Hunt leads after the third double bob in that Peal; at which place the whole Hunt, half Hunt, and quarter Hunt do lie together before the bells, and the single is made in third and fourths places.

Or if the first bob in any Peal is a single bob, then the first single change may be made the second time the whole Hunt leads after the third single bob; where the whole Hunt and half Hunt do alwayes lie together before the bells, and the quarter Hunt behind, therefore the single change must be made behind.

The first single change in any Peal may also be made either at the first, second, or third single bobs, at which places the whole Hunt leads, the half Hunt lies in tenors place, and the quarter Hunt in fourths place, therefore it must be made behind.

The first single change in any Peal may also be made the next time the whole Hunt leads after the last bob-change of the first or second double bobs, at which place the whole Hunt, and quarter Hunt do alwayes lie together before the bells, and the half Hunt in fourths place, therefore the single change must be made in third and fourths places. And in most Peals, the first single change may be made the next time the whole Hunt leads after the last bob-change of the third double bob; and in some Peals, the first single change may be made the second time the whole Hunt leads

after

after the third double bob (notwithstanding the first bob-change in that Peal is a single bob, as in the Eighteen-score treble, second and fourth before set down) which falls out according as the first bob change happens to be made either nearer the beginning of the Peal, or farther from it; for in some Peals, the bells will come round in course the next time the whole Hunt leads after the last bob-change of the third double bob. And in many Peals, the bells will come round at the fore-stroke the second time the whole Hunt leads after the last bob-change of the third double bob, *&c.*

There are two single changes in every Seven-hundred and twenty, which are alwayes made when the whole Hunt leads, the last single change in every Peal being constantly made just Eighteen-score changes from the first; for making of which, observe these Rules.

If the first single change (in any Peal) is made the second time the whole Hunt leads after a double bob, then the second single change must be made the second time the whole Hunt leads after the third double bob, accounting from the place where the first single change was made.

If the first single change in any Peal is made the second time the whole Hunt leads after a single bob, then the second single change must be made the second time the whole Hunt leads after the third single bob, accounting from the place where the first single change was made. Or if the first single change is made at a single bob, then the second single change must be made at the third single bob, accounting from the

the place where the first single change was made.

The second single change in every Peal must be made between those two bells, and in the same place where the first single change was made; and the whole Hunt, half Hunt, and quarter Hunt, will in course lie in the same places at the second single change, where they lay at the first: either the half Hunt, or quarter Hunt, are alwayes one of the two bells which makes every single change. But there are many other wayes to make the single changes, *viz.* to make them between the half Hunt, and quarter Hunt, at any dodge, where those two bells do dodge together next before a bob, *&c.* of which I need not say any thing more in this place, having already set down all those wayes which are most easie and convenient to be practised.

In Ringing this Peal of Grandsire bob, (with any whole Hunt, half Hunt, and quarter Hunt) if there's no single change made within Eighteen-score changes from the beginning of the Peal, the bells will in course come round in their right places, just at the end of Eighteen-score changes.

In any Peal of Grandsire bob, where the first is a double change, and made at the back-stroke, the last change of the Peal (which brings the bells round in their right places) is a treble change, and made at the fore-stroke.

The Seven-hundred and twenty changes of Grandsire Bob may be Rang without making any single change therein, which way of Ringing

ging it, is call'd *Grandsire Bob True*; that is, the changes are all true trebles and doubles without any single change therein. There are made two double changes (contrary to the course of all the double changes in the Peal) to supply the place of the two single changes, which two are called True changes; and to be made divers wayes, and at several places. The first true change in any Peal may be made at the first, second, or third double bobs either at the first or second bob-change of each. At the first bob-change of any double bob it may be made, by moving the Bell in fourths place down under two Bells at once into the seconds place, and the two hindmost Bells must make a change at the same time: for Example, in the Eighteen-score of treble, second and fourth before set down, at the first bob-change of the first double Bob, the Bells stand thus, 143526. Now the true change is made, by moving the Bell which lies in fourths place down under two Bells at once into seconds place, and the two hindmost Bells are at the same time to make a change thus, 154362. At this place it may be made another way, by moving the hindmost Bell down under two Bells at once into the fourths place, and the two Bells in second and thirds places are at the same time to make a change thus, 134652. At the last Bob-change of each double Bob, it may also be made two wayes; one of which, is to move the Bell in fourths down into the seconds place, and the two hindmost Bells at the same time to make a change, as I shewed you before: But the best and easiest way is to move

move the bell whith lies in fourths place up over two bells at once into the tenors place, and the two bells in second and thirds places to make a change as at a bob: for instance, at the last bob-change of the first double bob in the Eighteen-score before set down, the figures stand thus, 143652. Now the bell in fourths place must be moved up behind, and the two bells in second and thirds places are to make a change, 134526. The second True change in every Peal must be made just Eighteen-score changes from the first, in making of which, these Rules are to be observed. If the first true change in any Peal is made at the first bob-change of a double bob, then the second true change must be made at the first bob-change of the third double bob, accounting from the place where the first true change is made, but not reckoning that for one of the three: or if the first true change is made at the last bob-change of a double bob, then the second true change must be made at the last bob-change of the third double bob, accounting from the place where the first true change was made, but not reckoning that for one of the three. And the second true change in every Peal must be made in the same manner and place as the first; the true and single changes in Grandsire bob, are both to one and the same effect (*i.e.*) to alter the course of the extream bells; for in making these changes, the whole hunt, half hunt, and quarter hunt are to continue their constant course without variation, neither of those 3 bells being any otherwise concerned therein, than at the change which should have been made, if the single or true change had been forborn.

There is another way to Ring this Peal of Grandsire Bob, by a course differing from the former. When the whole Hunt leads, the half Hunt lies in fifths place, and the quarter Hunt in fourths place, then the next change is a single bob; and when the whole Hunt leads, and the half Hunt lies in fifths place, and the quarter Hunt in thirds place, then the next change is the first bob-change of a double bob; the bobs and dodge-changes herein are made in the same manner, as those in the former way: But the bobs herein are called by a Rule differing from the former, *viz.* when the whole Hunt and half Hunt do lie together before the bells, and the quarter Hunt (lying in fourths place) dodges with the bell in thirds place, then the second time the whole Hunt comes before the bells (from that place) there is made the first bob-change of a double bob, the second bob-change being made the next time the whole Hunt leads after. When the whole Hunt and half Hunt do lie together before the bells, and the quarter Hunt (lying in fifths place) dodges with the bell in tenors place, then the second time the whole Hunt leads (from that place) is made a single bob.

There are two single changes in the Seven-hundred and twenty, the first single change in any Peal may be made at the first, second, or third single bobs, at which places it must be made between the 2 hindmost bells; or the first single change may be made the next time the whole Hunt leads after the first, second, or third single bobs, at which places 'tis alwayes made

made between the two hindmoſt bells. The firſt ſingle change may alſo be made the next time the whole Hunt leads after the laſt bob-change of the firſt, ſecond, or third double bobs, where it muſt alwayes be made in third and fourths places. But in ſome few Peals it happens, that the bells will come round at the fore-ſtroke the next time the whole Hunt leads after the third ſingle bob, and alſo after the laſt bob-change of the third double bob, which falls out according as the firſt bob-change in each Peal is made, either nearer the beginning, or farther off.

The ſecond ſingle change (in every Peal) muſt be made Eighteen-ſcore changes from the firſt, in making of which, theſe Rules muſt be obſerved.

If the firſt ſingle change is made at a ſingle bob, then the ſecond ſingle change muſt be made at the third ſingle bob from the place where the firſt was made. Or if the firſt ſingle change is made the next time the whole Hunt leads after a ſingle bob, then the ſecond ſingle change muſt be made the next time the whole Hunt leads after the third ſingle bob, accounting from the place where the firſt ſingle change was made. And the ſame Rule is obſerved in making it after a double bob.

The ſecond ſingle change in every Peal muſt be made in the ſame place, and between thoſe two bells which made the firſt ſingle change: But (in Ringing this Peal) if you make no ſingle change, the bells will in courſe come round at the end of Eighteen-ſcore changes.

The way to begin ſeveral of theſe Peals, is as follows.

In Ringing treble, third, and fifth; and second, third, and fifth; and also third, fifth, and second; the first change is treble, and the next double, and so forward in the common course of trebles and doubles, until the first Bob in each comes to be made. In treble, second and third, the first changes are treble and double in the common course; and the second time the treble leads, there's a double Bob. In treble, tenor and second, the first changes are treble and double in the common course; and the second time the treble leads, there's a single Bob. In treble, second and fifth, the first change is a dodge between the four hindmost Bells; and the second time the treble leads, there's a single Bob. In second, fourth and tenor, the first change is made between the 4 Bells in the midst. In treble, second and fourth, the first change is a dodge behind; and the second time the treble leads, there's a double Bob.

Changes on eight Bells.

There are 40320 several changes on 8 bells, which to Ring it is altogether impossible; the greatest Peal that ever was Rang on 8 Bells, is 1680, being only a third part of the changes on seven Bells, which are to be Rang with a whole Hunt, half Hunt, quarter Hunt, half quarter Hunt (for so you may term it) and three extream Bells: But the most complete and musical Peal that ever was Rang on eight Bells, is Grandsire Bob, treble, second and fifth, Half-pulls, on 1.2.3.5.6.7. the fourth and the tenor lying behind every change, thus, 12356748. which has of late been practised by

by the *College-Youths*, and excellently well performed by them. Grandsire, and Tendring Six-score on eight Bells makes good Musick, 7.4.8. lying behind every change: And a Six-score (four extreams) on the six Bells in the midst, the treble leading all the way, and the tenor lying behind, making a change at first between the 4 and 5, and then proceeds forward in the Six-score, making the second the whole Hunt, and the seventh the half Hunt, it makes excellent Musick; but after the Six-score changes are made, the fourth and fifth must change their places again to bring the Bells round.

35678,241
12357,864
12357,468
12357,648
12356,748
34567,218
45678,321
12368,574

The most musical Peals that are commonly Rang on eight Bells, are these Six-scores on five, the other three Bells lying behind every change: For example, the uppermost fig. are 35678,241. here the 35678, makes the Six-score changes, 3 the whole hunt, and 8 the half Hunt, or any others, and 241. strikes behind every change, in the same order as they now lie, and so of the rest. The three Bells which are to lie behind, must first be hunted up one after the other in order, before any of the Six-score changes are made. The Seven-score and four on the six middle Bells, the treble leading, and the tenor lying behind every change, makes good Musick.

Of Hanging Bells.

FIrst, for the Stock, much need not be said, but of placing the Cannons or Crown of

the Bell into it, which is called *Hanging of a Bell*, I ſhall ſpeak ſomething: Firſt, find out whether the Cannons be upright and true, then raiſe the Bell up by ſome Rope tyed to the Cannons, and ſo that the Bell hang level, which you may find, by applying a Plumet to the brim, then faſten a ſtring to the Crown-ſtaple within the Bell, then (a Plumet being tyed to the other end of the ſtring) if the ſtring hang in the midſt between the two ſides of the Bell whereon the Clapper ſhould ſtrike, the Crown-ſtaple is caſt into the Bell true: Now when you have hung the Bell, and let the Gudgeons in true by Keys (for therein conſiſts the main point of the going of a Bell) then if the Clapper hang in the midſt between the two ſtriking ſides, and the Stock ſtand upright, the Bell is well hung.

If a Bell have a longer ſtroke on the one ſide, than the other, truſs up that ſide which hath the ſhort ſtroke more, or let the other ſide down, and put a piece or two of Leather in, according to the ſtroke; but ſometimes the fault of the ſtroke is in the Sally, which you may remedy, by tying the Fillet (or little Cord about the rim of the Wheel, which cauſeth the dancing of the Rope) nearer, or farther off the main Spoke; nearer makes a ſhort ſtroke, farther off the Spoke, a long one.

And obſerve, that the truſſing or taking up of a great Bell far into the Stock by a notch, makes the Bell go eaſier, and lie lighter at hand (that is) when it is ſet; for the farther the brim of the Bell is from the centre of gravity, the heavier it is: Now the centre of gra-

vity

vity is a ſuppoſed line drawn through the Stock from one Gudgeon to the other; but note, if you truſs a Bell up, that the Crown-ſtaple be much above the Gudgeons, you muſt faſten a falſe Eye to the Crown-ſtaple, and to this falſe Eye hang the Clapper, otherwiſe it will not ſtrike ſo freely: Now ſmall Bells muſt be truſſed up ſhort, for elſe the Bell hanging low, and fetching a great Compaſs in the ſwing, and having but little Compaſs in the brim, the Clapper keeps along by the ſide of the Bell, and gives no blow at all; but being hung ſhort, the Bell fetches a quick and ſhort Compaſs, equal to the bigneſs of the brim, and the Clapper ſtrikes well.

Now for the tempering of the Gudgeons, I leave it to the judgment of the Workman; but a word or two of the poliſhing of it. After it is filed, or turned exactly round, take two pieces of Oak, and oyl one ſide of each, and ſtrew fine Sand thereon, and clap them in a Smiths Vice, with the round of the Gudgeon between, then turn it about, until you think it is ſufficiently poliſhed, then oyl the ſides of the pieces of Oak wherein there is no Sand, and ſo clap them in a Vice, with the Gudgeon between, as before, then turn it round, and it will poliſh the Gudgeon wonderful ſmooth; and if the Braſſes are likewiſe well poliſhed, the Bell will go as well at the firſt, as ever: Now by the neglect of this, the roughneſs of the Gudgeon will wear the Braſſes ſo unequally, that the Bell will never go ſmooth and ſteddy.

Now I would adviſe all Bell hangers to hang Bells with bolts of Iron to come from

the Cannons through the Stock, and to fasten them with Keys at the top of the Stock, and not with plates nailed on the sides; for they are mighty inconvenient to fasten a bell that is loose in the Stock, or to alter the stroke.

As for the Rowle, let it not be without, nor within the hollow of the side of the Wheel; nor above, nor below the hollow at the bottom of the Wheel. Now the bigger a Wheel is, if the Frame will permit, the bell will go the better; when the wheel is new, nail Stays from the Stock to each Spoke, to keep it from warping.

'Tis very convenient (if the Frame will permit) to fasten a piece of Timber about half a foot long on the end of the main Spoke at the top of the Wheel (whereon the end of the bell-rope is fastned) with a notch on the end of it; so at the setting of the bell, the Rope will hit into that notch from the Rowle, and this will make the bell lie easier at hand when it is set, and flie better.

FINIS.